Matching the nutritional needs of hospitals through catering practices

Mikkelsen, Bent Egberg

Publication date:
2001

Document Version
Early version, also known as pre-print

Partial Agreement
in the Social and Public Health Field
Accord Partiel
dans le domaine social et de la santé publique

EUROPEAN FORUM

FOOD AND NUTRITIONAL CARE IN HOSPITALS: ACTING TOGETHER TO PREVENT UNDERNUTRITION

proceedings

Strasbourg, Council of Europe, 21 - 22 November 2001

Contents

Programme

FORUM ON FOOD AND NUTRITIONAL CARE IN HOSPITALS: ACTING TOGETHER TO PREVENT UNDERNUTRITION

PROGRAMME : 21 NOVEMBER 2001

OPENING SESSION :

PREVENTING UNDERNUTRITION IN HOSPITALS

	Chair of the Forum	Dr Lars OVESEN
14:00	Welcome address	Mrs Gabriella BATTAINI-DRAGONI Director General, DG III Social Cohesion, Council of Europe
14:10	Opening address *Development of clinical nutrition*	Dr Markku ÄÄRIMAA President, Standing Committee of European Doctors
14:25	*The patient's right to adequate nutritional care*	Dr Orla ZINCK European Partnership on Patients' Rights and Citizens' Empowerment
14:40	Keynote address *Undernutrition in hospitals: a challenge for prevention*	Prof. Peter FÜRST President, European Society of Parenteral and Enteral Nutrition University of Hohenheim
15:00	Coffee/tea break	

SESSION 1

EUROPEAN AND NATIONAL INITIATIVES

	Chair of the Session	Dr Kaija HASUNEN Ministerial Adviser Ministry of Social Affairs and Health, Finland
15:20	Council of Europe report and guidelines on food and nutritional care in	Dr Lars OVESEN Head of Nutrition and Division Danish Veterinary and Food

hospitals Administration

15:40	National guidelines on hospital food and nutrition in Norway	Dr Karl-Olaf WATHNE National Council on Nutrition and Physical Activity, Norway
16:00	Critical issues – Better hospital food	Mr Paul CRYER General Manager - Better Hospital Food Programme, NHS, UK
16:15	Discussion	
16:40	Coffee/tea break	

PROGRAMME : 21 NOVEMBER 2001

SESSION 2

QUALITY OF LIFE AND COST EFFICIENCY

	Chair of the Session	Mrs Henriette ØIEN Adviser, National Council on nutrition and Physical activity, Norway
17:00	Impact of nutritional state on quality of life	Prof. Jörgen LARSSON Huddinge University Hospital
17:20	Hospital food – treatment or hotel service?	Prof. Simon ALLISON University of Nottingham
17:40	Matching the nutritional needs of hospitals through catering practices	Dr Bent Egberg MIKKELSEN Catering Centre, Nutrition Department, Danish Veterinary and Food Administration
18:00	Discussion	
18:30-20:00	Reception offered by the Secretary General of the Council of Europe at the Council of Europe Restaurant	

PROGRAMME : 22 NOVEMBER 2001

SESSION 3

DELIVERING NUTRITIONAL CARE

	Chair of the Session	Mrs Ulla NILSSON BALKNÄS Senior Lecturer, University of Gothenburg
09:00	Screening hospital patients against undernutrition	Prof. Jean-Claude MELCHIOR Hôpital Raymond Poincaré, Garches
09:20	How to ensure and document that patients eat adequately	Dr Jens KONDRUP Rigshospitalet, Copenhagen
09:40	Hospital environment and food intake	Prof. Sölve ELMSTÅHL Lund University
10:00	Discussion	
10:30	Coffee/tea break	

PROGRAMME : 22 NOVEMBER 2001

SESSION 4

ACTING TOGETHER TO ENSURE ADEQUATE NUTRITIONAL CARE

	Chair of the Session	Dr Liz JONES Principal Clinical Advisor, NHS Estates, UK
10:50	Organising and managing nutritional care in hospitals	Prof. Peter SCHAUDER Georg August University, Göttingen
11:10	The role of the patient in ensuring adequate nutritional care in hospitals	Ms Hanka MEUTGEERT International Alliance of Patients' Organizations (IAPO)
11:25	Practical exercise in translating specific nutritional needs into hospital meals	Prof. Ulrich KELLER Basel University Hospital

11:40	Improving nutritional care in Swedish health care	Dr Torsten MOSSBERG Director, National Board of Health and Welfare, Sweden
11:55	Short comments from different actors in the field and discussion	
12:30	Lunch	

CLOSING SESSION

	Chair of the Forum	Dr Lars OVESEN
14:00	Nutritional practice in hospitals in Hungary: causes of undernutrition	Dr Mária BARNA President, Hungarian Society of Nutrition
14:20	Discussion	
14:30	Conclusions of the Forum	Dr Lars OVESEN
14:45	Closing reflections	Prof. Simon ALLISON University of Nottingham
15:00	Close	

Speakers' papers

Welcome Address

Mrs Gabriella BATTAINI-DRAGONI

Director General, DG III - Social Cohesion

Council of Europe

WELCOME ADDRESS

by Mrs Gabriella BATTAINI-DRAGONI

Mr Chair,
Ladies and Gentlemen,

On behalf of the Secretary General, Mr Walter SCHWIMMER, it is for me a great pleasure to welcome you to the Council of Europe.

I am very happy that we have brought together a wide range of actors in the hospital nutrition field to discuss and propose solutions to the problem of undernutrition among patients.

It is quite shocking that we may be talking about a third or even a half of hospital patients being undernourished. Such a situation leads to longer hospital stays and diminished quality of life which is even more serious among vulnerable groups like older patients. Nor should we forget the additional costs this brings to health care. It is in everyone's interest to seek solutions to this problem and, as you have noted, the Council of Europe has already prepared recommendations on the topic, but we need your help to finalise them and to carry them out in member states.

Let me first say a few words about the Council of Europe in order to situate the institutional context of this Forum.

With its 43 member states representing more than 800 million citizens the Council of Europe is a truly pan-European intergovernmental organisation which aims:

- to protect human rights, pluralist democracy and the rule of law;
- to consolidate democratic stability in Europe;
- to promote awareness and encourage the development of Europe's cultural identity and diversity;
- to strengthen social cohesion and social justice;
- and to seek solutions to problems facing European society within a wide range of activities.

In addition to our highest decision-making body, the Committee of Ministers, and the work programme pursued under its authority, other Council of Europe bodies, such as the Parliamentary Assembly, the Court of Human Rights and

the Congress of Local and Regional Authorities of Europe also share these aims and work toward their fulfilment.

By granting consultative status to over 350 non-governmental organisations, the Council of Europe is building a real partnership with European citizens. Through various consultation arrangements (including discussions, colloquies and forums) it brings NGOs into intergovernmental activities and encourages dialogue between different actors on major social issues.

In the Directorate General for Social Cohesion we seek solutions to specific problems in the social and health field. Our Social Cohesion Strategy involves action to combat poverty and social exclusion, particularly in areas such as housing, health, education and training, employment, income distribution, and social services. More generally, we aim to strengthen those forces that help to create social solidarity and a sense of belonging. One of our instruments is the Development Bank of the Council of Europe which participates in the financing of social projects, responds to emergency situations and thus contributes to improving living conditions and social cohesion in the less advantaged regions of Europe.

The Council of Europe also sets up Partial Agreements, a form of "variable geometry" co-operation, which allows a number of states to carry out a specific activity of common interest with the consent of other members. One of these Partial Agreements, the Partial Agreement in the Social and Public Health Field, has organised this Forum. It was established already in 1959 and at present counts 18 member states and two major activity sectors: the integration of people with disabilities, on the one hand, and public health, on the other.

The aim of the public health sector is to improve the quality of life of Europeans through the health protection of consumers, especially as regards nutrition, food safety, pharmaceuticals and cosmetics. Until recently, the activities concerning food were mainly focused on the safety evaluation of flavouring substances, food packaging components and contaminants. A few years ago, however, a new Committee of Experts on Nutrition, Food Safety and Consumer Health was set up to deal with nutritional and consumer concerns on a wider scale. This Committee of experts, the members of which are appointed by national authorities, prepares draft resolutions of the Committee of Ministers, guidelines, reports and information notes aimed at harmonising pertinent practices in the member states. Its work has ranged from functional foods to food supplements and from energy drinks to stored product protection. One of its core tasks is to hold European forums on topical subjects bringing together people from different walks of life for debate and exchange of information.

A subgroup of the Committee of Experts, chaired by Dr Ovesen – who is the chairman today as well – has already studied the nutritional issues of European hospitals for two years. Its provisional report and guidelines, which have been

distributed to all of you, have revealed the unacceptable extent of undernutrition among hospital patients while a series of recommendations has been put forward to remedy the situation. Now we need a debate to ensure that no major questions have been forgotten and that realistic means are found to improve the situation. This is why we have invited you to join the Forum. I also hope that you will act as our messengers in your own countries sharing the insights of the Forum with your colleagues at home.

The provisional report and guidelines will only be finalised in the light of your contributions. We also plan to issue the core recommendations in the form of a resolution of the Committee of Ministers (it is a legal instrument, albeit not binding) in order to give them added political weight. We should no longer tolerate excuses on cost grounds for not delivering adequate nutritional care to patients since the benefits of preventing undernutrition clearly outweigh the moderate costs of proper food service. Hospital administrations should acknowledge responsibility for the nutritional care of patients and foster co-operation among staff and patients to ensure that recommendations are carried out. It is high time that we deliver to the European hospital patient on this point.

I also hope that the network of experts who have been involved in the work of the Council of Europe on the topic will continue to monitor the situation in member states to ensure that real progress is made in preventing undernutrition in hospitals.

I wish you success in your deliberations and would also like to invite you to a reception, offered by the Secretary General, which will take place tonight at 6.30 p.m. here at the Council of Europe Restaurant. I thank you all for your attention.

Opening Address
The development of clinical nutrition

Dr Markku ÄÄRIMAA

President,
Standing Committee of European Doctors

THE DEVELOPMENT OF CLINICAL NUTRITION

by Dr Markku ÄÄRIMAA

It has always been known that adequate and sufficient nutrition is essential for people. The oldest texts of medicine, for example those of Hippokrates, show that doctors have since ancient times underlined the importance of nutrition for the well being of the patients.

But understanding how nutrition works has taken a long way to go, and only with the help of the tools given by science has this mystery gradually been unveiled. Antoine Lavoisier (1743-1794) is considered to be the father of nutrition. He showed that nutrients undergo active digestion in the gut and not fermentation as was previously assumed. He also showed the connection of respiration and food consumption. He proposed that nutrients are slowly combusted in the body with oxygen, which is provided by the lungs and respiration. Unfortunately the respiration of Lavoisier was abruptly cut by guillotine in the French revolution.

In the 19th century science gradually recovered and chemists made new discoveries. All the three main sources of energy and building material, carbohydrates, fat and protein were discovered. The effects of starvation aroused much interest, the weight and composition of different tissues were measured in partial and complete lack of these basic elements. It was discovered that something else was also needed. Dr Hopkins in the USA found that purified nutrients had deleterious effects. In 1911 one of those minute but important elements was discovered, an amine which could prevent a disease called beri-beri. Evidently this amine was vital, and it got the name vitamin B. Other vitamins were discovered soon after, like vitamin A and vitamin C. None of the vitamins which were discovered later were amines.

Another new concept was introduced in medicine in 1904, when Sterling proposed the name hormone (greek=exciting) for a substance, which was released by cells of the duodenum and which stimulated the secretion of pancreatic juice. This finding fuelled the search for other hormones, one of which proved to be especially important: insulin. Insulin was discovered by two Canadian scientists: Charles H Best and Frederic G Banting in 1921. It proved to play a central role in the uptake and distribution of glucose in the cells. The early decades of the 20th century revealed many of the fundamental features of human metabolism.

In 1931 Cuthbertson found that there is a sequence how tissue protein breaks down under stress and trauma, which he called ebb and flow faces of metabolism. In 1936 Selye launched his theory of general adaptation syndrome,

proposing that the response of the human body to stress always follows a similar pattern with certain hormonal alterations.

The second world war provided huge amounts of evidence of the effects of starvation, but it also was a great test of the value of the discoveries related to nutrition. In England for example it was noted that neonatal and infant mortalities declined, the incidence of anaemia declined, growth rate in children increased and the general state of nutrition of the population improved. Food was tightly rationed, everyone got just the amount that he/she needed.

The war also brought along blood banks and widespread use of transfusions. Basic infusion techniques were developed as well as solutions of saline and other salts.

Gradually it also became more and more important to development nutrients for interveinous use for seriously sick people. That became a necessity with the birth of intensive care units at the end of 1960´s. Carbohydrates, protein hydrolysates and fat emulsions could be given intravenously in Europe, but fat emulsions were not available in the US in the 1970´s. This made it necessary to use other energy reach solutions, and techniques which enabled the use of strongly hypertonic glucose infusions were introduced.

New materials like silicon became increasingly popular in the 1980´s, and narrow, soft and comfortable nasogastric tubes, infusion pumps and sophisticated surgical techniques to open stomas to the stomach and gut where introduced.

Now we know how to feed the patient adequately in most conditions even when the patient is not able to eat or take anything by mouth. We know more and more about the effects of different kinds of nutrition to the well being of our patients and the impact of disease and trauma. In most hospital kitchens more than 20 different diets for various conditions are prepared, and the combination of these means that the kitchen must be able to provide 100 different types of food for the patients.

Clinical nutrition has become a science, which deserves its proper place in medical curriculi. More dieticians are needed to assist doctors to take care of the best possible nutrition of their patients. This also demands more and more educated kitchen personnel.

Although the technical side of nutrition has advanced rapidly, the psychological aspects of eating may deserve more attention. Eating is not only nutrition. It is also a joy of life, which in turn might prove to be more important to the recovery and well being of the patient than we ever expected.

The patient's right to adequate nutritional care

Dr Orla ZINCK

European Partnership on Patients' Rights
and Citizens' Empowerment

THE PATIENT'S RIGHT TO ADEQUATE NUTRITIONAL CARE

by Dr Orla Zinck

The European Consultation on the Rights of Patients was held in Amsterdam on 28-30 March 1994 under the auspices of the WHO Regional Office for Europe (WHO-EURO). The purpose was to define principles and strategies for promoting the rights of patients, within the context of the health care reform process underway in most countries.

The Consultation came at the end of a long process, during which WHO/EURO encouraged the emerging movements in favour of patients' rights by carrying out studies and surveys on the development of patients' rights throughout Europe. These studies showed a common interest and a number of policy trends and initiatives in the European countries, indicating that additional support to policy development in many of those countries would be appropriate. In broad consultation with governments and other institutions in European countries, technical experts in the field drafted "The Principles of Patients' Rights", a comprehensive text that could be meaningful and helpful in the development of country policies on patients' rights.

The meeting gave detailed consideration to a wide range of possible strategies based on the principles presented in the document and on the recent and current experiences of participants. Some of the essences of these strategies are:

- National colloquia and conferences to bring the parties together to create and promote a share sense of understanding;

- Involvement of the media in informing the public, stimulating constructive debate and sustaining awareness of the rights and responsibilities of patients and users and their representative organs;

- Better training in communication and support skills for health professionals as well as for patient and other user groups, in order to further the development of a proper understanding of the perspective and role of all parties.

Co-operation between WHO, the Council of Europe and the European Union in support of patients' rights would be further enhanced by action taken as a result of this Consultation.

Against this background, the Principles of the Rights of Patients in Europe can be seen, in terms of content, as an action that seeks:

- To reaffirm fundamental human rights in health care, and in particular to protect the dignity and integrity of the person and to promote respect of the patient as a person;

- To offer, for the consideration of member states, a set of common basic principles underlying the rights of patients, which might be used when framing or reviewing patient care policies;

- To help patients obtain the fullest benefit from their use of the services of the health care system, and ease the effects of any problems which they may experience with that system;

- To promote and sustain beneficial relationships between patients and health care providers, and in particular to encourage a more active form of patient participation;

- To strengthen existing and afford new opportunities for dialogue between patients' organisations, health care providers and administrators;

- To ensure the protection of fundamental human rights and to promote the humanisation of assistance to all patients, including the most vulnerable such as children, psychiatric patients, the elderly or the severely ill.
  Information about health services and how best to use them is to be made available to the public in order to benefit all those concerned.

- Patients have the right to be fully informed about their health status, including the medical facts about their condition; about the proposed medical procedures, together with the potential risks and benefits of each procedure; about alternatives to the proposed procedures, including the effect of non-treatment; and about the diagnosis, prognosis and progress of treatment.

- Everyone has the right to receive such health care as is appropriate to his or her health needs, including preventive care and activities aimed at health promotion.

- Patients have a collective right to some form of representation at each level of the health care system in matters pertaining to the planning and evaluation of services, including the range, quality and functioning of the care provided.

Since the declaration (1994), 12 WHO-Europe member states have enacted either a law or a charter on patients' rights (including Denmark, in 1998) - And more than 10 member states have draft laws in Parliament.

"The patient's rights declaration" do not specifically deal with food, nutrition and undernutrition in hospitals. Food and nutrition is very important and therefore WHO welcome the initiative from the Council of Europe to deal with the very important problem with food and nutrition in the hospital environment. But before I turn to the subject food and nutrition, I think it is important to give a basic understanding of what it means, in reality, to be a patient in a hospital. As a patient you are exposed to radical changes in you daily life and normal values. In short terms one may describe the situation of being a patient as follows:

- Patients are in a state of anxiety, fear and stress
- Patients are removed from their familiar surroundings
- Patients are surrounded by strangers and uniformed staff
- Patients lose their privacy and are subjected to some extent to humiliating experiences such as medical examinations
- Patients may feel uncomfortable, because the medical routines go before food
- Patients are far from always able to decide one day in advance what kind of meals they are going to eat the next day
- Patients are in many situations unable to eat when they are hungry
- Patients are often forced to eat in their beds in an uncomfortable position
- As a patient your self-esteem may be decreased and you develop identity crises

It is also important to understand the role of food in the broadest aspects, because food, both in and out of hospitals, carries lots of traditions and values, which is part of the person and the society as such. One might call them "the social relations" and in this aspect one should also look at food and hospitals as shown below:

"Social and psychological relations"

- Food links people together
- Food can be – and is normally – a social event
- Food is the only bodily desire, which is socially accepted
- Food carry values – I am what I eat
- Food is the "safest" way to satisfy bodily desire in public

According to the draft of the report "Food and nutrition care in hospitals: acting together to prevent undernutrition" there are five major problems that seem to be common in this framework:

1) The lack of clearly defined responsibilities
2) The lack of sufficient education,

3) The lack of influence of the patients
4) The lack of co-operation among all staff groups
5) The lack of involvement from the hospital management.

Also, the report recommends issuing guidelines to ensure that assessment of nutritional status and requirements, hospital food, and nutritional support and monitoring are regarded as important and necessary components of patient care.

It is important to realize that changing the problems of nutrition and undernutrition in hospitals is a very difficult task, due to various problems. One of the major problems is that food preparation, especially in public catering, has a very low status. There are also many complicating factors that need to be dealt with if you want to change the nutrition status in the hospital sector.

The general attitude towards hospital foods is in general not positive. Reading various newspapers around Europe will give you an idea of what you are up against. Just taken from the headlines you will learn that hospital foods are “poor quality”, “ over cooked”, “too cold”, “don’t taste good” etc. And these headlines often reflect the general opinion in the public.

If, on the other hand, you look inside the hospital you will find opinions regarding hospital foods as having:

- low status
  (both among doctor, nurses and hospital directors)
- with the possible exception of special diets

And you might hear from the kitchen staff:

- They feel isolated
- Have no contact with customer/patients
- Are low paid
- Have a low formal education

And regarding technology and architecture in a modern hospital:

- You have centralized plating system
- You have food on trays
- There are no dining facilities

The results are nutritional problems as:

- You find poor nutritional status
- The patients do not fully benefit from treatment and have a higher death rate
- The patients stay longer at the hospital

If you look at a modern hospital you will find some general terms and conditions, which very often don’t result in high service, quality and nutrition. An example would be a modern rigid centralized portioning system with small ward kitchens, long warmholding of food, often cold food, tray-serving, limited choice, wrong choice resulting in too big or too small a portion, fixed eating hours and poor eating environment.

In general terms you might say that in some modern hospitals the serving system treats everybody as an equal – but only because the trolley arrives at the ward at a certain time and at that time everyone has to be hungry and eat!

Unfortunately, this does not match the patient's situation. Many patients get hungry outside meal hours and their appetite may change from one hour to the next. And it is very difficult or to be precise - it is impossible to determine what portion size you may be able to eat tomorrow at noon, especially when you have to decide the day or in many cases two days before.

In this respect it is important to view hospital catering in a very broad manner. It must be a combination of nutrition, knowledge of patients, good taste, and pleasant environment. To put it straight "only when food is eaten – is it good nutrition"!

One has to change attitudes and change the low status to a high/higher status, to create flexible systems with choice and taste, to have knowledge of the customer/patient, to give the necessary information – and of course consider the finances as well.

Outside the hospital environment you might call it in a modern term "Total Quality Management (TQM)".

Keynote address
Undernutrition in hospitals : a challenge for prevention

Prof. Peter FÜRST

President, European Society of Parental
and Enteral Nutrition, University of Hohenheim

UNDERNUTRITION IN HOSPITALS : A CHALLENGE FOR PREVENTION

by Professor Peter Fürst

"....Thousands of patients are annually starved in the midst of plenty ...."
Florence Nightingale, 1859

The major inquiries

In 1974, Charles E. Butterworth published his landmark observation entitled "The skeleton in the hospital closet". In his paper Butterworth noted that nutritional deprivation has adverse effects on structure and function of all organs and systems; produces clinical disease and has detrimental effect on concurrent illness (1).

Today it is depressing to read the abundant available literature on undernutrition in hospitals. Indeed, it is not difficult to identify undernourished patients, and it costs almost nothing.

The combination of pre-existing undernutrition, surgery and occasional periods of acute starvation indicates the subgroup that needs to be targeted for early nutritional intervention. Gains accrue to patients, physicians - especially surgeons and hospital managers - namely lower postoperative/post injury morbidity and mortality, better outcome, better surgical results, and a reduction in hospital costs. The combined results from the last 25 years not only reflect the lack of recognition of undernutrition and unsatisfactory nutritional management they provide further evidence that outcome is less favourable in these patients (2). Undernutrition adversely affects muscle function, immunity and mental function and delays recovery from illness (3,4). Studies in undernourished patients have demonstrated more rapid recovery, reduced hospital stay and in some cases reduced mortality, following nutritional support (5-9).
So why isn't anything being done ? (10)

The evidence of undernutrition

"Anyone who has gone without food for a day or two will know the discomfort" (11).

The past two decades have witnessed the development of overwhelming evidence that malnutrition in the hospital setting is prevalent and that it is a financial drain on the healthcare community (2). Factors contributing to the continuing incidence of malnutrition in the critical care setting include the aging of the population, the higher acuity level of patients seeking care, and the treatment of chronic diseases. These factors are coupled with the continuing lack of attention to the nutrition status of patients at the time of admission. It has

been demonstrated repeatedly that hospital lengths of stay and associated charges are highest for those patients who are at risk for or have evidence of protein caloric malnutrition (3). While malnutrition still exists in the critical care setting and even though there appears to be an association between malnutrition and poor outcome as measured by Average Length of Stay (ALOS) (12). The emphasis on organised nutrition support does not appear to be a high priority, as reflected by care and documentation of care. “Patients go hungry in British hospitals“ (13).

In the Brazilian National Cross sectional multicenter study medical teams awareness of the patient’s nutritional status was registered in 18.8% of the medical charts. 15.1% were weighed at admission, despite the fact that there were nearby scales in 75% of the cases (14).

Undernutrition in hospitals - the magnitude of the problem

Regardless of the methods that have been used to assess the nutritional status of the patients in European hospitals the conclusion is the same: undernutrition is significant; a prevalence of up to 50% at admission to hospitals has been reported (11). The prevalence of hospital undernutrition as derived from 9 studies using 8 different criteria to define undernutrition is illustrated in Fig. 1. The majority of patients has an average food intake less than recommended and continues to lose weight while in hospital. Undernutrition increased from 41% to 51% in non-surgical gastrointestinal and internal medicine patients (15). Of 112 patients with all kinds of diagnoses, hospitalised for more than a week, 64% had lost weight (mean weight loss: 5.4%) when discharged, including 75% of those initially most undernourished (3). 50% of surgical gastrointestinal and orthopaedic patients lost up to 5% of body weight, 25% lost between 5 and 10%, and 8% lost between 10 and 15%. However, 21% of the patients had oedema when their weights were first measured (16). The most dramatic deterioration in nutritional status was seen in the first two weeks. For example, 64% of surviving stroke patients lost weight, 30% gained weight and 6% had stable weight, compared with 45%, 47% and 8%, respectively, during the second week of the hospital stay (17). In surgical patients 89% lost weight during their post-operative stay, 33% lost 5-10% of their admission weight and 5% lost $>$10% (18).

The Brazilian national cross sectional multicenter survey in 4000 hospitalised patients showed that malnutrition was present in 48.1% of the patients. Malnutrition correlated with admission primary diagnosis, presence of infection, cancer, age and longer LOS (14) for the Brazilian studies with 48.1% malnutrition. Length of hospitalisation until the moment the patients were assessed negatively influenced the nutritional status.

Consequences of undernutrition

There are many adverse consequences of undernutrition. Subjectively, the patient becomes apathic and depressed, and this may lead to loss of morale and loss of will to recover. A general sense of weakness impairs appetite and ability to eat. Weakened respiratory muscles are associated with increased risk of lung infection and impaired ventilatory drive, reduced cardiac output is at risk of heart failure. Gastrointestinal function and structure is impaired. Mobility is reduced, delaying recovery and predisposing to thrombo-embolism and bedsores. The consequences of undernutrition in the hospitalised and especially in critically ill patients include impaired muscle responses, wound healing, postoperative morbidity and mortality, are to consider. The inhibitory effect of undernutrition on immune function are compounded further by trauma, sepsis and surgery per se (19,20). In the Brazilian study (14), the incidence of complications in the undernourished group was 27.0% versus 16.8% in the well nourished. Infectious complications were significantly greater in malnourished cases (19.4% versus 10.1%). The mortality rate was 7.3%, however malnourished patients presented with a rate of 12.4% versus 4.7% of the well nourished. Length of hospital stay was 16.7 $\pm$ 24.5 days in the malnourished, versus 10.1 $\pm$ 11.7 days in the well nourished (14).

Measures to avoid hospital undernutrition - cost benefit

Assessment of nutritional risk of the patients is the first step in the treatment of undernutrition. Hence it should be performed already at admission and repeated regularly during the hospital stay. The diagnosis of undernutrition is currently a synthesis of many pieces of data; the objective is to pick up which pieces accurately make the malnutrition and predict its consequences. At present, there still is no gold standard for diagnosis of undernutrition or the prediction of nutrition-related complications. It appears that a synthesis of historical, clinical, biochemical and anthropometric data is still the best approach to diagnose malnutrition (21,22,23). Against this background it is difficult to understand why the determination of nutritional status is not undertaken as a part of routine clinical assessment, why undernourished patients do not receive appropriate nutritional management and why some nutritional support is allowed to continue in a suboptimal and potentially dangerous manner (24).
There are efforts in developing an evidence-based screening approach. It is based on the assumption that it is the combination of undernutrition and severity of disease that leads to the indication for nutritional support and that severe undernutrition or severe stress metabolism by their own are indications for nutritional support (25).

At some hospitals in Europe nutrition support teams successfully introduced nutritional screening in order to identify patients at risk. The appointment of a nutrition support co-ordinator - like in some UK, Spanish, Scandinavian hospitals - has facilitated the implementation of adequate nutrition policy and improved staff training. However, a substantial number of countries (hospitals) lack nutrition advisory groups or teams (26)

The key to opening the closet door is education (27) and as the role of nutrition in prevention and treatment of disease gains greater understanding and attention from clinicians and researchers, methods of assessing nutritional status and screening of nutritional risk become more varied and accurate. However, now that the problem has been realised, diseases requiring nutritional support and associated co-morbid conditions have become increasingly more complex (28). While costs for services and products should be apparent and easily quantified, savings are often invisible and difficult to quantify. Economic reviews frequently confuse charges with cost. In a true captivated managed care environment, charges are irrelevant; the costs associated with providing products and services is the only important factor (29).

Certainly if a managed care group looks hard enough it will find evidence that nutrition support is cost-effective. A recent study reviewing 22 published nutrition surveys in 70 hospitals over the past 15 years, documenting that 25% to 90% of admitted patients had risk factors for malnutrition. Patients receiving early nutrition intervention (day 3) had a 2,1 day shorter average length of stay, with direct variable cost per bed per day savings of $ 697 (8).

Denmark has reported a cost-benefit analysis on the effect of nutritional support. The assumptions were that 100.000 patients per year could benefit from nutritional support. That would result in a reduction in LOS of 4 days and a saving of 67 million EURO/year. On top of that the average daily bed cost was assumed to decrease because of a reduced rate of complications. The resulting savings totalled 133 million EURO/year (30). Corresponding calculations have been made in the UK. The Kings Fund Centre report calculated that providing comprehensive nutrition support would result in a decrease in LOS of five days for approximately 10% of the patients. The consequent savings were estimated to be 453 million EURO/year (31). It has been also calculated that providing nutritional support to surgical patients would save at least 560 EURO/patient (32).

An audit of about 2,500 cases in 20 US hospitals found substantial reductions in LOS in the patients who received early nutritional support. On average, LOS was reduced one day for every two days earlier the treatment was started. The conclusion of the American study was that appropriate and timely nutritional support could save a typical large US hospital about 1.0 millions $/year (13).

The analysis of costs in the Brazilian study (18), based on cost tables, demonstrated that malnourished patients represented an increase in hospital costs of 12%. However, a projected cost analysis based on the tables of the main insurance companies in Brazil, showed that malnourished patients may have a 308.9% average increase in costs. It was concluded that malnutrition leads to higher complications, increases, mortality, length of hospital stay and costs (18).

Undernutrition - the challenge for prevention

There are encouraging trends which suggest that the problem of undernutrition is now being addressed (26). Guidelines on nutritional care have been introduced by the Austrian Society, the British Society of Gastroenterology, PEN, Danish and Swedish Societies. The guidelines worked out by the German Society have just been presented in September at the 23rd ESPEN meeting in Munich.

Indeed, the “skeleton“ in the hospital closet is seen less frequently in our hospitals today than it was 3 decades ago. Nevertheless, the nature of illness is such that undernutrition continues to be prevalent and to have major impact on outcome (28).

The recognition and acceptance of nutritional therapy as a medical treatment has a considerablel ethical, moral and resource implication to other areas of medical practice. It is certainly unethical not to consider adjuvant nutritional support. From the ethical standpoint, there is no precedent that resources should be seen as a reason not to treat (32). “Health care providers should not make unilateral decisions to provide, withhold or withdraw nutrition support

on the basis of limiting costs or rationing scarce resources for the benefit of Society unless required by the law. No such law exists at this time“ (Guidelines ASPEN, 1993) (34).

It is to emphasize that though many of the inquiries related to undernutrition may represent failure of medical or nursing staff to be aware of difficulties associated with nutrition in particular conditions - it is to suspect that many of the problems relate to the actual changes in the role and responsibilities of ward nursing and ancillary staff. Clearly, as well as the maintenance of adequate numbers of staff, communication between different clinical disciplines must be increased to ensure that these problems are recognised and dealt with accordingly. This line of reasoning means that rather than professing indignation on behalf of doctors and nurses it is conceivable that politicians, in particular the Ministers of Health, would be better advised to commission some prospective research and subsequent measures on this important subject in order to ensure that sufficient and well educated staff is available to offer appropriate nutrition to patients in hospital.

The most efficient weapon in nutrition support armamentarium remains the clinician and office staff personnel who processes a thorough understanding of the metabolic responses to starvation and illness as well as appreciation of the tools of screening and assessment of undernutrition (28).

REFERENCES:

1. Butterworth C E. The skeleton in the hospital closet. Nutr Today 1974; 9:4-8
2. Giner M, Lavino A, Meguid M, Gleason J R. In 1995 a correlation between malnutrition and poor outcome in critically ill patients still exists. Nutr 1996; 12:23-29
3. McWhirter J P, Pennington C R. The incidence and recognition of malnutrition in hospitals. BMJ 1994; 308:945-948
4. Bettany G E A, Powell-Tuck J. Malnutrition: Incidence, diagnosis, causes, effects and indications for nutritional support. Eur J Gastroent. and Hepatol 1995; 7:494
5. Delmi M, Rapin C H, Bengoa J M, Delmas O P D, Vasey H, Bonjour J P. Dietary supplementation in elderly patients with fractured neck of femur. Lancet 1990; 335:1013-1016
6. von Meyenfeldt M F, Mijering W H, Routlard M M, Buil-Maassen N T H, Soeters P. Perioperative nutritional support - a randomised clinical trial. Clin Nutr 1992; 11:180-186
7. Rana S K, Bray J, Menzies-Gow N, Jameson J, Payne James J J, Frost P, Silk D B A. Short-termin benefits of post-operative oral dietary supplements in surgical patients. Clin Nutr 1992; 11:227-44
8. Tucker H N, Miguel S G. Cost containment through nutrition intervention: Nutr Rev 1996; 54:111-21
9. Tucker H N (2000). Nutrition-related outcome in critical care. In: From nutrition support to pharmacolic nutrition in the ICU. Pichard C, Kudsk K A (eds), Springer Heidelberg, pp 1-4
10. Royce C, Taylor M. Identifiying malnutrition benefits everybody. BMJ 1994, 308:1370
11. Powell-Tuck J. Penalties of hospital undernutrition. J R Soc Med 1997; 90:8-11
12. Gallagher-Allred C R, Voss A C, Finn S C, McCamish M A. Malnutrition and clinical outcomes: the case for medical nutrition therapy. J of Am Diet. Assoc 1996; 96:361-366
13. Wise J. Patients go hungry in British hospitals. BMJ 1997; 314:399-401
14. Waitzberg D L, Waleska T C, Correia I T D. Hospital malnutrition: The Brazilian National Survey (IBRANUTRA): A study of 4000 patients, Nutr 2001; 17:573-580
15. Naber T H, Schermer T, de Bree A, Nusteling K, Eggink L, Kruimel J W, Bakkeren J, van Heereveld H, Katan M B. Prevalence of malnutrition in non-surgical hospitalised patients and its association with disease complications. A J Clin Nutr 1997; 66:1232-9
16. Bruun L I, Bosaeus I, Bergstad I, Nygaard K. Prevalence of malnutrition in surgical patients: evaluation of nutritional support and documentation. Clin Nutr 1999; 18:141-7
17. Garibella S E, Partker S G, Taub N, Castleden M. Nutritional status of hospitalised acute stroke patients. Br J Nutr 1998; 79:481-7
18. Ulander K, Jeppsson B, Grahn G. Postoperative energy intake in patients after colorectal cancer surgery. Scan J Caring Sci 1998: 12:131-8
19. Silk D B A (ed.) Organisation of nutritional support in hospitals. British Association for Parenteral and Enteral Nutrition,. ADM & C Ltd. Biddenden, Kent 1994
20. Heys S D, Wahle K W. J. Targeted Nutrition in the critically ill: therapeutic modality for the New Millennium ? Nutr 2001, 17:57-58
21. Morgan S L. Identification of indicators for improving the diagnosis of malnutrition. Nutr 1995, 11:202-204
22. Arrowsmith H. Malnutrition in hospital: detection and consequences. Brit J of Nursing 1997; 6:19:1131-1135
23. Kelly I E, Tessier S, Cahill A, Morris S E, Crumley, D, McLaughlin D, McKee R F, Lean M E J. Still hungry in hospital: identifying malnutrition in acute hospital admissions. Q I Med 2000; 93:93-98
24. McWhirter J P , Pennington C R. Malnutrition in hospital practice. Nutr 1996; 12:56-57
25. Kondrup J. Can food intake in hospitals be improved ? Clin Nutr 2001; 20 (supple- ment 1):153-160
26. Pennington C R, McWhirter J P. Malnutrition is common, unrecognised, and treatable in hospital patients. Letter to the Editor:Patients go hungry in British hospitals. BMJ 1997; 314:752
27. Coats K G, Morgan S L, Bertolucci A A. Hospital associated malnutrition: a re-evaluation 12 years later. J Am Diet Assoc 1993; 1:27-31
28. Blackburn G L, Ahmad A. Skeleton in the hospital closet - Then and now. Nutr 1995, 11:193-194
29. Ovesen L and Kondrup J, personal communication
30. August D A. Creation of a specialised nutrition support outcome research consortium; if not now, when ? JPEN 1996; 20:394-400

31. Davis A M, Bristow A. Managing nutrition in hospital. Nuffield Trust 1999:8
32. Green C J. Existence, causes and consequences of disease-related undernutrition in the hospital and the community, and clinical and financial benefits of nutritional intervention. Clin Nutr 1999; 18:3-28
33. MacFie J. Ethics and Nutritional Support. Nutr 1995; 11:213-216
34. Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients. JPEN 1993; *17:50.*

Council of Europe report and guidelines on food and nutritional care in hospitals

Dr. Lars OVESEN

Head of Nutrition Division,
Institute of Food Research and Nutrition
Danish Veterinary and Food Administration

COUNCIL OF EUROPE REPORT AND GUIDELINES ON FOOD AND NUTRITIONAL CARE IN HOSPITALS

by Dr Lars OVESEN

Background

It has been repeatedly documented that hospital undernutrition and inadequate food intake is a common occurrence. Disease-related undernutrition has been reported in 10-55% of people in hospital, and many patients lose weight during admission. Rapid weight loss may have adverse effects on the treatment and outcome of illness and weight loss increases morbidity and mortality (McWhirter & Pennington 1994; Naber et al. 1997, Silk 1994). Weight loss of as little as 5% (2-3 kg), in combination with disease may effect outcome.

There is ample evidence that routine nutritional support increases total energy and protein intake and improves weight and nutritional indices of patients (Potter et al. 1998), however whether feeding improves patient outcome is scientifically debated. The conclusion from the intervention studies performed can be added up as follows: Feeding probably improves outcome in patients with specific conditions/disorders (see table 1.) who are critically ill, severely malnourished, and/or moderately stressed and malnourished.

Table 1. Evidence from randomised controlled trials of nutritional support in clinical practice (from Avenell & Handoll 2000; Heyland et al. 1993; Klein et al. 1997)

Disease	Evidence
Peri-oprative	Parenteral nutrition to patients with recent weight loss and gastro-intestinal cancer for 7-10 days before surgery decreases post-operative complications
Fractured femur	Oral supplements reduce complications and length of hospital stay in old women with low skin fold measurements
Liver cirrhosis	Adequate enteral or parenteral nutrition improve liver function in patients with poor food intake
Bone marrow transplantation	Short-term parenteral nutrition increases long-term survival and decreases the tumour relapse
Trauma	Enteral nutrition has a favourable impact on gastrointestinal immunological function and

	infectious morbidity.

"The Food Chain"

Several actions must take place, and many in a coordinated way, to secure the patient an adequate food intake during hospital admission (Kondrup 2001). These include: 1) screening of patients to identify those at nutritional risk, 2) the monitoring of dietary intake, 3) modifying the hospital menu according to patient preferences, 4) ensuring that serving and ambience of mealtimes are focused on the patient with reduced appetite, and 5) proper food preparation and distribution. It is a complex set of tasks that can be depicted as a food chain. A weak link in the chain may have negative consequences on the food intake of the patient and ultimately on patient outcome (Allison & Stanga 2000). Consequently, a prerequisite for proper hospital nutrition is that all stages in the provision of food from nutritional risk screening and menu design to distribution and serving must be dealt with adequately.

It is important to realise that food is more than therapy (the domain of the physician). Food is also care (domain of the nurse), taste (domain of food service), cost (domain of the administration) and joy (domain of the patient). The involvement of the many stakeholders in hospital food effectuation highlights one major challenge of how to cooperate to prevent undernutrition.
In routine clinical practice the poor nutritional status of many patients is not recognised and many do not receive any nutritional therapy (Lennard-Jones 1992; McWhirter & Pennington 1994). Nutritional risk screening should therefore always be performed taking both the nutritional status and the severity of disease into consideration.

Purpose

Although there is growing awareness that undernutrition, in association with disease, is a significant problem in affluent countries, with a considerable economic bearing, it is not widely recognised, acknowledged and accepted. Therefore, the Council of Europe (the Committee of Experts on Nutrition, Food Safety and Consumer Health of the Partial Agreement in the Social and Public Health Field) decided to collect information regarding *Nutrition programmes in hospitals*.

A European network (the *ad hoc* Group on Nutrition Programmes in Hospitals) was established in 1999 with the aims:

- To review current practice regarding hospital food provision and highlight deficiences in food service systems.
- To consider how politicians, hospital administrators, food service and health care personnel might work together to improve the nutritional care and support of hospitalised patients.
- To issue guidelines, which secure that assessment of nutritional status and requirements, hospital food, and nutritional support and monitoring are regarded as important and necessary components of patient care.

The *ad hoc* group is responsible for the provisional edition of “Food and Nutritional Care in Hospitals: How to Prevent Undernutrition”. The following is a summary of the guidelines in the report.

Barriers

Five major factors, common throughout Europe, seem to be the major barriers to proper nutritional care in European hospitals:

1. Lack of clearly defined responsibilities in planning and managing nutritional care.
2. Lack of sufficient educational level with regard to nutrition among all staff groups.
3. Lack of influence of patients.
4. Lack of cooperation between different staff groups.
5. Lack of involvement from the hospital administration.

1. Lack of clearly defined responsibilities in planning and managing nutritional care

The responsibilities, duties and tasks of different staff categories with respect to nutritional care and support and food service seem to be unclear in most European hospitals. As a consequence, routine nutritional risk screening and assessment is generally not performed. When it is performed weight, weight loss and BMI are used most frequently as screening tools. Neither is nutritional counselling commonly practised. Finally, the use of nutritional support for undernourished patients and at-risk patients is sparse and inconsistent.

Besides the lack of clearly formulated descriptions of responsibilities and tasks of each staff group involved in the nutritional care of the patient, other common explanations why nutrition-related practices are not done, are decreased length of stay, and lack of time, staff, nutritional education and interest.

Guidelines to item 1. The responsibilities of staff categories and the hospital management with respect to procuring nutritional care should be clearly assigned. This means that standards of practice for assessing and monitoring nutritional risk/status of the patient should be developed at a national level, and the responsibility of each task clearly assigned. An increasing number of patients suffering from undernutrition are currently treated at home after discharge from hospital; consequently the responsibility of the hospital with regard to the nutritional care and support of the patient should *not* be limited to the hospital stay.

2. Lack of sufficient educational level with regard to nutrition among all staff groups

Physicians' education contains few lessons addressing nutrition-related topics. Teaching has lagged behind nutritional research, which has forged ahead, increasing the gap between knowledge and practice. It has become difficult for individual physicians, who use nutritional support techniques only occasionally,

to provide optimal nutritional support according to the principles of best-documented practice.

Nurses generally find it difficult to identify risk patients, set up nutritional treatment plans and monitor the effect of nutritional support, and widespread deficiencies have been reported in the required communication and co-ordination ensuring consistent good nutritional care.

The clinical dietitians seem to receive the most up-to-date training, however their educational level and responsibilities are in practice very varied, probably caused by many factors, e.g., lack of clinical awareness of the benefits of nutritional care, and lack of support and access to adequate financial resources.

Food service staff may not be aware of the importance of providing highly nutritious food to ill patients. A result is the lack of a powerful voice for food service systems, unlike clinical services, when it comes to financial control and the allocation of budgets. Nutrition is not taught on all courses, and what is taught may be insufficient. Also, there is an educational lack with regard to administration.
Finally, the non-clinical staff members, who have the closest contact with the patient in relation to food, are the ones who know least about nutrition.

Guidelines to item 2. A general improvement in the educational level of all staff groups is needed. Specifically, a continuing education programme in general nutrition and techniques of nutritional support for all staff involved in the nutritional care of patients should be available with focus on the nutritional training of the non-clinical staff members and the definitions of their area of responsibility.

3. Lack of influence of the patients

European hospitals seem to have an image problem when it comes to the quality of the food served. Before even tasting it patients expect poor quality (Homes 1999), and after tasting it their expectation is often confirmed. Many patients consider a hospital stay as a way to lose a few pounds. The serving of general hospital menus with a low fat content may support this fallacy. Very few patients are aware of the fact that a weight loss in relation to disease will increase their risk of complications. Also, it is known that the patients do not often ask for in-between meals, even though they are available.

In most European hospitals the patients have a choice between menus. However, a choice of menus is not necessarily beneficial if, for example, undernourished patients choose food from the low nutrient density, healthy eating option. In general, assistance with menu choice is imperative to prevent patients from choosing foods which are inadvisable with respect to their clinical condition. Apparently, the information given to the patients regarding a proper menu is sparse and inconsistent. Also, there is seldom a good description of the offered menus. Finally, a menu often has to be ordered the day in advance, and a change in the medical condition of the patient may make foods chosen 24 hours before unsuitable.

Yet, the attitude of the patients could be another barrier, if they do not want to participate in the decision-making regarding their own menu. People of minority ethnic backgrounds are especially vulnerable. The information given may not be

understood, and also particular methods of food preparation and eating practices may be extremely important.

Additional factors, such as the hours of meal service, the length of mealtimes and disturbances during mealtimes, such as rounds by medical personnel, seem to affect the way the patients enjoy and consume their food.

Guidelines to item 3. The provision of meals should be individualised and flexible and all patients should have the possibility to order food and extra food – and be informed about this possibility. Also, patients should be involved in planning their meals and have some control over food selection. This should include the possibility of immediate feedback from the patients with respect to likes and dislikes of the served food – and the use of this feedback to develop appropriate, target group specific menus.

4. Lack of co-operation between different staff groups

Lack of appetite due to the disease is probably the main reason for hospital undernutrition. Hence, the ambience, with its element of informing the patient, preparing the patient, motivating the patient, urging or feeding the patient, and other aspects of doing and showing care (*i.e.,* the food culture among *all* staff members of the hospital), is essential in relation to the food chain. In general, the simplest and safest way to provide adequate nutritional support – getting the patient to eat more – requires close collaboration between the patient, and the medical, nursing, dietetic and food service staff. In practice, however, such co-operation seldom functions.

Guidelines to item 4. The hospital managers, physicians, nurses, dietitians and food service staff should work together toward the common goal: optimal nutritional patient care – and the hospital management should give priority to co-operation, *e.g*., by initiating organisational research to optimise co-operation. Also, organised contact between the hospital and the primary health care should be established.

5. Lack of involvement from the hospital management

Management does not generally consider food service to play a particularly important role in the service the hospital is providing, and food service is not always seen as an important therapeutic aspect of patients' hospital stay. Food service departments are usually grouped with general facilities rather than patient treatment services. The food service is often regarded as an issue that can be addressed separately, and as a simple task any food service operator could handle.

The general trend is that food service in European hospitals is increasingly administered through contracts. This means that the hospital management negotiates a contract with the food service operator. All significant terms and conditions in relation to the service should be described in the contract. Accordingly, the process of establishing the contracts and tenders becomes an extremely important tool when trying to improve hospital nutrition. Hence, high quality food service is not only a question of skilled food service operators. It

also requires very competent purchasers at hospital management level. If the management is unable in well-defined terms to describe what the food service should include the performance of the out-sourced service is going to be poor.

Guidelines to item 5. The provision of meals should be regarded as an essential part of the treatment of patients, and not just as a hotel service. The hospital management should acknowledge responsibility for food service and the nutritional care of the patients, and give priority to food policy and administration of food services. The hospital management should take account of the costs of complications and prolonged hospital stay due to undernutrition when assessing the cost of food service.

Other barriers to improve hospital nutrition

Other barriers to be overcome to improve hospital nutrition have been revealed. These include lack of

- Studies on the clinical outcome of nutritional support in patients identified by nutritional risk screening.
- Studies on the effect of ordinary food, incl. energy dense diets, meal pattern, menu choice and meal ambience, on intake and patient well-being.
- Studies on the effect of nutritional support pre- and post-hospitalisation.
- Organisational research to improve the co-operation between different staff groups.
- Studies on the interrelation of food service technology and food service management and organisation, and meal serving systems.
- Valid methods to assess patient satisfaction.
- Refined and extended health-economic studies measuring cost/benefit, including quality of life, of nutritional support.

Conclusion

All patients have the right to expect that their nutritional needs will be fulfilled during their hospital stay. Good nutrition is a prerequisite for an optimal effect of the specific treatment offered to the patient, hence the number of patients in good nutritional status is a sound indicator of the quality of care provided by the hospital. Identification of nutritional risk patients should always be followed by a treatment plan including dietary goals, monitoring of food intake and body weight, and adjustment of treatment plan.

At present, the average length of stay in some European hospitals is short, between 5 and 10 days. This should *not* lead to the misconception that one should not have to care very much about nutritional care in hospitals: 1) many of the nutritionally at-risk patients have a long stay in hospitals, 2) during the pre-surgery outpatient diagnosis and examination, the hospitals will have to deal with the patients' nutritional problems before surgery is performed, and 3) when discharged from hospital, it will be the duty of the hospital to prescribe a

plan to be followed, and also in some cases the hospital will be responsible for follow-up after discharge.

An increasing number of successful initiatives to improve the situation with respect to the nutritional practices have been documented from all over Europe. Among these initiatives are the publication of national guidelines for hospital food provision, and nutritional care and support, and the establishment of organisations/committees with main focus on clinical nutrition.

It therefore seems to be a proper time to combine the experiences from all these efforts in a common struggle to prevent undernutrition in hospitals.

REFERENCES

Allison S P, Stanga Z. Organisation of nutritional care. In: Sobotka L, Allison S P, Fürst P, Meier R, Pertkiewicz M, Soeters P B, Stanga Z, Eds. Basics in clinical nutrition. 2nd edition. Prague: Galen, 2000; 157-64.

Heyland D K, Cook D J, Guyatt G H. Enteral nutrition in the critically ill patient: a critical review of the evidence. Intensive Care Medicine 1993;19:435-442.

Holmes S. Nutrition: a necessary adjunct to hospital care. J R Soc Health 1999;119:175-179.

Klein S, Kinney J, Jeejeebhoy K, Alpers D, Hellerstein M, Murray M, Twomey P. Nutrition support in clinical practice: review of published data and recommendations for future research directions. J Parent Ent Nutr 1997;21:133-156.

Kondrup J. Can food intake in hospitals be improved? Clin Nutr 2001;20 (Supplement 1):153-160

Lennard-Jones JE. A positive approach to nutrition as treatment. London: Kings Fund, 1992.

Mc Whirter JP, Pennington CR. Incidence and recognition of malnutrition in hospital. British Medical Journal 1994;308:945-948.

Naber TH, Schermer T, de-Bree A. Prevalence of malnutrition in nonsurgical hospitalized patients and its association with disease complications. American Journal of Clinical Nutrition 1997;66:1232-1239.

PotterJ, Langhorne P, Roberts M. Routine protein energy supplementation adults: a systematic review. British Medical Journal 1998;317:495-501.

Silk DBA. Organisation of nutritional support in hospitals. British Association for Parenteral and Enteral Nutrition. ADM & C Ltd. Biddenden, Kent, 1994.

National guidelines on hospital food and nutrition in Norway

Dr. Karl-Olaf WATHNE

National Council on Nutrition and Physical Activity
Norway

NATIONAL GUIDELINES ON HOSPITAL FOOD AND NUTRITION IN NORWAY

by Dr Karl-Olaf WATHNE

There are no representative data showing the percentage of patients in Norwegian health institutions that are undernourished. Nordic studies show that approximately 3-4 of every 10 patients eat too little and two of ten show signs of undernourishment. The degree and incidence of undernourishment is dependent on the diagnosis and the age of the patient.

In a study from Oslo (M. Mowé and T. Bøhmer) of persons older than 70 who were hospitalized, 52.9% of the men and 60.6% of the women were undernourished at the time of admission. 65% of the men and 69% of the women had had an insufficient energy intake during the month prior to admission. (Am J Clin Nutr) In a different study by the same authors of 121 patients who were older than 70, 9 patients had a height/weight ratio of less than 60% of the norm, 16 patients between 60% and 75% and 41 patients between 74% and 90% of the norm, but none of them had been diagnosed as undernourished when they were discharged. Conclusion: Undernourishment is underdiagnosed and undertreated. (J Am Geriatr Soc)

The National Council on Nutrition and Physical Activity (also known as the NCNPA) is a professional and administrative body under the Ministry of Health and Social Affairs which is responsible for matters regarding nutrition, physical activity and health. The primary objective is to give expert advice and produce evaluations for public authorities, research environments, health and social services, schools, places of employment, voluntary organisations, the catering trade, the food industry, the grocery trade, the media and consumers.

The NCNPA is responsible for making recommendations to the health and social services on the nutritional aspects of treating disease. The main focus of these efforts has been formulating the “Dietary guidelines for health institutions”, first issued in 1983. These guidelines were revised and incorporated in a more comprehensive version of the ‘‘Guidelines’’ in 1985. The guidelines were to be used:

- as a basis for the dietary treatment that is administered at hospitals and other health institutions;
- for dietary planning at hospitals and other health institutions;
- as a basis for instruction and information.

The primary target group for the guidelines was kitchen staff. In 1989 a study guide and an instructional pamphlet were issued which dealt with diet in health institutions, intended for the nursing staff.

In 1993 there was a need for another revision based on the new knowledge and experience that had been gained. As a basis for revising the guidelines, the National Council on Nutrition at that time conducted a comprehensive survey of all of Norway's hospitals and a number of nursing homes and homes for the aged (a total of 600 institutions). Questionnaires were distributed to a ward physician, a ward nurse and the head cook at each institution. The response rates were 68, 83 and 74%, respectively. This survey provided information about the institutions' meal patterns, food production, access to and need for new products, budgetary constraints, patterns of cooperation, distribution of responsibility, knowledge of and attitudes towards clinical nutrition and its significance.

The most recent version of the Guidelines was issued in 1995, and many of the topics that are included in these guidelines were addressed on the basis of the responses to the 1993 questionnaire. The target groups were broadened to include physicians in addition to kitchen and nursing staff. Substantially greater emphasis was placed on presenting the medical basis for the recommendations, which are also based on the 1992-93 Report to the Storting on "Challenges in preventive medicine and health promotion efforts", which states that: "*Efforts to improve the diet of the population have always been part of the responsibility of the health services. The experience that has now been documented shows that the health services have not played a role that matches their potential based on existing capabilities and resources. A task ahead is thus to intensify the dietary emphasis in the health services. Better dietary counselling for those who have become ill and better nutritional care in health institutions are challenges for the future. Nutrition work in treating patients must be assigned greater priority.''*

The most recent guidelines contain substantially increased emphasis on the significance of nourishment during illness, including the problem of undernourishment, how to measure nutritional status, dietary records, proposals for the division of responsibility related to nutritional matters and proposed patterns of cooperation on nutritional matters.

The 1995 guidelines for diet in health institutions contain the following recommendations:

Measuring nutritional status

- All patients in somatic hospitals should be weighed once a week. Patients and residents in nursing homes and homes for the aged, psychiatric institutions and other institutions where patients often reside for long periods of time should be weighed once a month.

- Institutions should consider implementing schemes for recording the patients' intake of food and beverages.

Tracking weight changes and measuring food intake using dietary records are useful tools for assessing nutritional status. Guidelines should be set for *when* measures should be initiated and *what* measures may be relevant.

Distribution of responsibility and schemes for cooperation

The greatest challenge is to offer a sufficient amount of appetizing, high-quality food for patients/residents, served in pleasant conditions with the assistance that is tailored to the individual's needs. Patients/residents must be given the opportunity to choose their daily diet to the greatest possible extent. In order to achieve this, it is crucial that cooperation occurs at every stage in the chain, from purchasing until the food is eaten. It is essential that the distribution of responsibility is clearly defined.

- The individual institution determines the distribution of responsibility for nutritional matters. The following division of responsibility is recommended:

    - The administration has the ultimate responsibility for providing conditions that make it possible to serve the patients a proper diet.
    - The physician is responsible for all medical treatment and for prescribing appropriate treatment, including nutritional treatment.
    - The ward nurse has the day-to-day responsibility for ensuring that patients are given an appropriate diet adapted to their health and needs as well as for recording, assessing and reporting on the patients' food intake and nutritional status.
    - The head cook is responsible for ensuring that the kitchen supplies sufficient amounts of tasty food that meets the requirements for nutritionally wholesome food.
    - The head cook is responsible for taking part in the formulation of the institution's nutrition guidelines.
    - The clinical dietitian is responsible for actively taking part in the formulation and implementation of the institution's nutrition guidelines. The clinical dietitian is to provide individually adapted nutritional counselling for special groups of patients and residents and their family members and should play an active role in instructing the staff on diet-related subjects.
    - Patients/residents, if they are capable, have a responsibility for cooperating to achieve the best possible result of the treatment and care given.

- The institution assesses its routines for cooperation in nutritional matters. The goal must be: "the right food to the right patient".

- Dietary ombud/contact person. This is an employee on the ward (usually a nursing auxiliary or a nurse) who has been given special instruction in and responsibility for dietary matters.
- Nutrition committee/dietary committee, multidisciplinary (physician, nurse, clinical dietitian, head cook, possibly a pharmacist) which can be responsible for the planning, implementation and follow-up of the institution's nutritional and dietary routines.
- Nutrition team. This type of group (multidisciplinary) can be assigned responsibility for the nutritional treatment of patients with special, severe nutritional problems. Only a few hospitals in Norway have nutrition teams.

Meal pattern

Four regular meals should be served (breakfast, lunch, dinner and supper) + the option of at least one snack.

Alternative menus

It is recommended that institutions establish alternative menus, both for patients on the regular diet and for those who are on special diets.

Food production in institution kitchens

The guidelines contain concrete recommendations with regard to: food preparation, menu planning, types of serving, systems for ordering food, and information brochures.

There is also a detailed description of the various diets: 3 types of regular diets + various special diets, with reference lists for the various diets.

New since the former version:

- A regular diet (max. 30 energy-% fat), intended for patients whose general state of health is good, who have a good appetite and who do not need special diets (children, pregnant women, new mothers, the elderly, psychiatric patients, the disabled). The guidelines also describe a regular diet *which has been tailored* for patients with diabetes or who are overweight or constipated. For all these groups, the diet should serve as an example of wholesome, healthy everyday eating habits like those recommended for the general population.
- High-energy, highly nutritional diets for patients whose general state of health is very poor, patients with prolonged or serious diseases (e.g., cancer, hiv/aids), patients who need help to eat, patients with problems chewing/swallowing and patients with diseases which result in poor food absorption.

- Diets for psychiatric patients and for the disabled are addressed separately.
- Diets for immigrants are addressed separately.
- Diets for those in open care
- Diets for patients suffering from rare diseases

What has the National Council for Nutrition and Physical Activity done to disseminate information about these recommendations?

In order to make the first set of guidelines known, one-day seminars were held throughout the country, with physicians, clinical dietitians, nurses and other staff members as key target groups. Owners and administrators of health institutions and relevant employees' organisations were also invited to attend. These seminars were held in collaboration with the Norwegian Dietetics Association. The primary target group for these guidelines was institution kitchen employees.

When the revised guidelines were issued in 1995, the National Council for Nutrition and Physical Activity in collaboration with the county medical officers conducted one-day seminars for health personnel at health institutions, the municipal health services and others. The NCNPA drew up a proposed programme and provided 1-2 lecturers. For the other presentations "local resource persons" were drawn in (this was the responsibility of the county medical officer), i.e., the hospital's director, a physician, nurse, head cook and clinical dietitians. Educational material was developed (an overhead series with an instruction pamphlet) for in-house training, so that the individual institution could follow up the implementation of the new guidelines. The institutions were encouraged to take the initiative to schedule courses, meetings and theme days in order to assess the food services of the institution. Another suggestion for follow-up was setting a time frame and drawing up a plan for assessing the results of implementing the guidelines. Employees who do not have the authority to make decisions themselves were encouraged to communicate their ideas to their superiors, the nutrition committee or the nutrition team.

Experience gained

The work of implementing the guidelines has not been evaluated, but so far we can conclude that:

- Collaboration with the county medical officers (holding one-day courses) was constructive
  - labour-saving for the National Council
  - draws in local resource persons
  - clearly places responsibility
  - reaches a large number of employees in the health service
- However: it is difficult to get physicians to participate – why? No clear answer can be given, but experience shows that physicians are reluctant to attend courses if the target group is "health personnel".
- We do not know what has happened afterwards; i.e., <u>whether</u> and <u>how</u> the various health institutions have worked to implement the guidelines,

but our impression is that there is still substantial room for improvement in terms of placing food and nutrition on the agenda in Norwegian health institutions.

Further challenges in the future

- Enlist the commitment of the institution's administration, but how?
- Encourage hospitals and other health institutions to establish more positions for clinical dietitians
- Introduce "hospitals that promote health" with a focus on nutrition
- Work for reimbursement schemes for dietary counselling given by clinical dietitians at the hospitals' outpatient clinics (supplying the hospital with revenue)
- Provide a basis for the guidelines in legislation, which makes them more binding
- Involve the institution's physicians, but how?
  - Separate (accredited) courses for physicians
  - Integrate nutrition in already existing courses for physicians.

Critical issues – Better hospital food

Mr Paul CRYER

General Manager – Better Hospital Food Programme,
NHS, United Kingdom

CRITICAL ISSUES – BETTER HOSPITAL FOOD

by Mr Paul CRYER

Background

The aims of the Council of Europe (provisional edition P-SG (2001) 11) report and guidelines Food and Nutritional Care in Hospital: How to Prevent Undernutrition were;

- To review the current practice in Europe regarding hospital food provision and highlight deficiencies in the current food service systems.

- To issue guidelines, which secure that assessment of nutritional status and requirements, hospital food, and nutritional support and monitoring are regarded as important and necessary components of patient care.

- To consider how politicians, hospital administrators, food service and health care personnel might work together to improve the nutritional care and support of hospitalised patients.

The report also highlights five major factors which, it states, are common throughout Europe and which appear to be the major barriers for proper nutritional care in hospitals:

- lack of involvement from the hospital administration leading to a lack of recognition that the provision of meals should be regarded as an essential part of the treatment of patients;

- lack of influence from patients – insufficient involvement of patients in the provision of their meals and inadequate information available regarding the food services on offer;

- lack of sufficient education with regard to nutrition amongst all staff groups – an education programme should be available to all staff involved in the nutritional care of patients.

- lack of clearly defined responsibilities in planning and managing nutritional care – standards of practice for assessing and monitoring nutritional risk/status of patients should be developed.

- lack of co-operation between different staff groups – administrators, nurses, dieticians and food service managers/staff should work together towards a common goal of optimal nutritional patient care.

Inevitably, work to address all of these issues will be a long term objective. In some cases changes can be made to operational arrangements which can result in rapid improvements being made to services, with consequent benefits to patients, whilst at the same time more fundamental work is being taken forward to address organisation issues such as:

- the provision of programmes of education;
- building multi-disciplinary teams;
- clear definition of responsibilities across staff groups in terms of the nutritional care of patients.

The position in the United Kingdom

The potential to pay inadequate attention to the needs of hospital patients in terms of their overall nutrition has been recognised. A report published in 2000 by NHS Estates, an agency of the Department of Health, notes:

> *"Research has identified that 40% of adult patients and 15% of children are malnourished on admission, half of these severely so. The majority who depend on hospital food for all their nutrition continue to lose weight while in hospital, reflecting the inadequacy of current feeding policies. Improved consumption of hospital food can lead to less use of expensive feeding methods, better clinical outcome and shorter hospital stay."*

The NHS Plan

In July 2000, the Government announced the NHS Plan. This is a long-term plan to radically overhaul the way the NHS delivers services, and includes a number of sections aimed at improving the environment in which patients are treated. This is a recognition that non-clinical aspects of care can have a fundamental impact on the long-term outcome of the clinical care provided.

Section 4 of the NHS Plan includes a section aimed at Better Hospital Food. It recognises that the NHS serves over 300 million meals each year and invests in excess of £500 million in doing so. It also recognises however that the food served is variable in quality and is not provided in a way which is sufficiently responsive to patients. As a result, considerable amounts of food, and therefore money, are wasted. These standards, it says, are not good enough.

The NHS Plan therefore seeks to begin the process of redressing these shortfalls. It has required that:

- by the end of 2001 the NHS will provide a 24-hour catering service with a new NHS menu, designed by leading chefs. This will cover breakfast, a light lunch, two-course evening meal and drinks and snacks on at least two occasions each day. This will be the minimum standard for all hospitals;

- half of all hospitals will have new ‘ward housekeepers’ in place by 2004 to ensure that the quality, presentation and quantity of meals meets patient needs; that patients, particularly elderly people, are able to eat the meals on offer; and that the service patients receive is genuinely available round-the-clock;

- dieticians will advise and check on nutritional values in hospital food. Patients’ views will be measured as part of the Performance Assessment Framework and there will be unannounced inspections of the quality of hospital food.

The Better Hospital Food programme

The Better Hospital Food programme is the vehicle through which the requirements of the NHS plan are being, and will be delivered through the NHS.

Officially launched in May 2001, the programme has a number of key requirements. These, and the benefits they are designed to reap, are explained in the following sections.

The Mealtime Service

The first, and most fundamental requirement is to ensure that the normal mealtime service meets or exceeds the required standard set out in the NHS Plan.

From 31st December 2001, all NHS Hospitals are therefore required to provide:

- **breakfast** providing a choice of at least fruit juice, low and high fibre cereals, porridge or hot oat cereal, white and brown roll/toast/bread with butter/spread and preserve;
- **morning beverage and snack**: diluted fruit drink, water, tea, coffee, biscuits, cake, fruit and additional sweet/savoury items;
- **light lunch**: fruit juice, soup, roll/bread and butter/spread, light hot dish (meat/fish), light hot meal (vegetarian), sandwiches (meat/fish/vegetarian), fruit and energy dense cold dessert;
- **afternoon beverage and snack**: - range to be the same as for the morning service;
- **two-course evening dinner**: 3 main dishes (premium meat/fish, composite, vegetarian), salads, potato, alternative carbohydrate, two vegetables, roll/bread and butter/spread, hot dessert;
- **evening beverage and snack**: range as for breakfast/afternoon.
- **snacks are to be provided on at least two occasions per day.**

Included in this is the requirement to provide the main meal of the day in the evening to reflect modern eating habits. Where there are sound clinical or dietetic reasons for particular groups of patients to continue to receive their main meal of the day in the morning, then this practice may continue, but for all other patients this change must be effected by 31st December 2002.

Nutritional needs

Caterers in hospitals face a double challenge – to provide for the special needs of patients who are poorly nourished or who have increased nutritional requirements whilst also promoting health eating habits for others. As noted earlier, significant numbers of patients entering hospital have already lost weight due to previous illness and its side effects. It is therefore essential for hospitals to pay particular attention to ensuring that sufficient protein, energy and key vitamins and minerals are provided routinely for **all** hospital patients.

As a result of the Better Hospital Food programme, 31st December:
''All hospitals must provide the Estimated Average Requirement (EAR) for food energy and the Reference Nutrient Intake (RNI) for all other nutrients for the patient population they are responsible for nourishing".

The EAR and RNI are set out in the Better Hospital Food Implementation Support Pack issued to all hospitals and are also available on the website www.betterhospitalfood.com

The Better Hospital Food programme recognises the crucial relationship required between dietician and caterer in planning for and delivering a high quality, nutritious meals service. Guidance now specifically requires the inclusion of dieticians in the planning of menus and other components of the overall meals service arrangement.

It has already been noticed that a key factor in successful delivery of the Better Hospital Food programme requirements is the establishment of a multi disciplinary team approach to planning and delivering these services. Where such teams exist it appears that changes to existing systems can more easily be made because the multi disciplinary coalition has greater authority than individuals acting alone. The Better Hospital Food programme has endorsed the formation and use of such teams at hospital level whilst significantly promoting the role of the dietician in the management of catering services.

24-Hour service

For the majority of patients, the mealtime service as set out above should meet their full nutritional requirements.

However, it is recognised that for a variety of reasons patients may not be able to take full advantage of the mealtime service. Reasons for this may include:-

- absence from their bed due to the scheduling of treatment or tests;
- the timing of their admission may be outside the scope of the normal mealtime service;
- admission may follow a period elsewhere in the hospital e.g. A&E where patients may have been discouraged from eating pending clinical assessment.

In addition, there may be patients who on occasion are unable to find something they would like to eat from the main menu.

The 24-hour service has been designed to cater for these needs. From 31st December 2001, all hospitals are required to ensure that patients can have access to food 24 hours each day. Whilst special arrangements have been made for elderly mentally ill, adult mental health and learning disabilities clients, all other hospitals are required to provide:-

- A **Ward Kitchen** service – providing light refreshments including e.g. hot and cold beverages, toast/preserve and fresh fruit;

- A **Snack Box** service – providing a range of products including sandwiches, fruit, yoghurt, drink, confectionery and potato crisps.

From 2004, hospitals will also be required to provide:-

- A **Light Bite** service – a hot alternative to the Snack Box. These will most likely be frozen composite meals reheated and served to patients at ward level.

The National NHS Menu format

At present, each hospital is free to determine its own menu format. This means that there are as many different menus as there are hospitals and whilst there are many good examples of well designed, informative menus, there are also many examples which are poorly designed, provide

little or no information about the catering services on offer, and can be difficult to understand owing to the proliferation of symbols and codes. Many menus are also used as ordering systems so are left with patients for little time.

The new NHS Menu format aims to tackle these problems. It will ensure that:

- wherever a patient is admitted to hospital the menu format and design will be familiar and easy to understand,
- rather than listing all the meals on offer to all patients across the hospital on a single sheet, it will be sectioned so that patients can easily find that part which refers to them. All meals shown is a particular section will be suitable for that patient group (e.g. diabetic) so patients will not need to negotiate a complicated system of symbols and coding,
- it will clearly show the range of meals on offer during the menu cycle in the hospital – whether this be a one, two, three of in some cases four week cycle. Thus patients will be able to exercise a greater degree of forward planning regarding their meal choices,
- It will also explain the services available through the 24 hour service,
- unless there are clinical/dietetic reasons to prevent it, patients will be able to choose meals from any section of the menu,
- menus will remain with patients throughout their hospital stay as a source of information about the hospital catering services. Included on the back cover will be the aims of the catering services so that patients will know what they can expect.

Leading Chef recipes

The NHS Plan requires there to be a new NHS Menu 'designed by leading chefs'.

The vast majority of the recipes used by NHS caterers have been in use for many years. Whilst some of these produce high quality, popular dishes, there is no doubt that for large sections of the hospital population brought up with a more expansive approach to cuisine, existing menus are boring, do not provide tempting choices and therefore do not contribute to patients taking full advantage of the food, and therefore nutrition, on offer.

In addition, a common difficulty was that the time and resource which was required for hospitals to devise, develop and test recipes lead to a lack of innovation in this area.

To help address this, the internationally respected food critic Loyd Grossman was asked by the Secretary of State for Health to identify and lead a team of chefs from the private sector who would design a range of dishes for the NHS which would complement the existing dishes on offer. The product would be an expanded range of recipes, collectively known as the NHS Dish Selector, which would be available to all hospitals and from which they could choose when compiling menus. Each recipe would come with full supporting nutritional analysis so that this process would not need to be repeated at hospitals across the NHS with the consequent cost and time implications.

There are currently 45 'leading chef' recipes available for the NHS to use, all of these are 'original' recipes new to the NHS. Work with the leading chef team is continuing to expand the range of these dishes, and will in future include existing popular NHS dishes. The aim is to have at least 100 such recipes available by 31st December 2001, and by that date hospitals must make available on their menus three such recipes each day.

Ward housekeeper services

Ward housekeepers are seen as a crucial component in improving food services to patients. Although food services are not their only duty, they will provide a constant focus for catering services and will be a familiar figure to whom patients can turn for help. Although the precise list of duties for housekeepers will be determined locally, typically in terms of the catering services they will include:-

- taking responsibility for the ward kitchen, keeping it clean and free from out of date food, ensuring refrigerated food is appropriately labeled and stored,

- assist patients to order food and ensure that orders are forwarded to the catering department, ensure that discharged and newly admitted patients meal requirements are noted, co-ordinating any additional meal requirements which may arise or ensuring meals no longer needed are cancelled,
- preparing, presenting and serving food and drink, including ensuring that temperatures are right, that food is attractively presented, and that patients who need assistance to eat are given that assistance,

- ensuring that the environment on the ward is conducive to patients enjoying their meals, that areas and equipment used for food service are clean, fresh water and clean glasses are available, waste is promptly and appropriately disposed of and that all staff recognise and understand how important food is, both clinically and socially.

The Essence of Care

Published by the Department of Health in February 2001, *The Essence of Care* is a practical toolkit for nurses and others. It focuses on those core and essential aspects of care that matter to patients and their carers, and yet which do not always attract the attention they should.

Of particular significance in this context is the section headed Food and Nutrition. The aim is to set out those steps which are needed to ensure that patients are enabled to consume food (orally) which meets their individual need. These are included in 10 Factors, each with a benchmark of Best Practice as follows:

The Next Steps

The Better Hospital Food programme is a long-term project to radically overhaul the way in which food services are provided to patients.

The recently formed Better Hospital Food panel will act in an advisory capacity to Ministers on the standards and targets to be set for the NHS in the coming years in order to continue to build on the progress made to date. Whilst it would be premature to state what these might be, it is clear that they will wish to look at issues such as training and service delivery styles in addition to organisational issues such as waste management and cost control.

SUMMARY

The Better Hospital Food programme will ensure that patients will begin to see very real improvements in the quality and availability of food in hospitals.

	FACTOR	BENCHMARK OF BEST PRACTICE
1	Screening/Assessment to identify patients/clients nutritional needs	Nutritional screening progresses to **further assessment for all** patients/clients identified as **'at risk'**
2	Planning, implementation and evaluation of care for those patients who required a nutritional assessment	Plans of care based on **on-going** nutritional assessments are devised, implemented and evaluated
3	A conducive environment (Acceptable sights, smells and sounds)	The environment is **conducive to** enabling the **individual** patients/clients to eat
4	Assistance to eat and drink	Patients/clients **receive the care and assistance** they require with eating and drinking
5	Obtaining food	Patients/clients/carers, **whatever their communication needs**, have sufficient information to enable them to obtain their food
6	Food provided	Food that is **provided by the service** meets the needs of individual patients/clients
7	Food availability	Patients/clients have set meal times, are **offered a replacement meal if a meal is missed and can have access to snacks at any time**
8	Food presentation	Food is presented to patients/clients in a way that takes in to account what **appeals to them as individuals**
9	Monitoring	The amount of food patients actually eat is **monitored, recorded** and leads to **action** when cause for concern
10	Eating to promote health	**All opportunities** are used to encourage the patients/clients to eat to **promote** their own **health**

The programme currently in place is a ‘good start’, but it is recognised that more needs to be done if the NHS is to similarly realise the full benefits to be gained from investing in nutrition.

The Council of Europe Report and Guidelines on food and nutritional care in hospitals would be a valuable addition to the body of works which have and will continue to inform the development of the Better Hospital Food programme.

Impact of nutritional state on quality of life

Prof. Jörgen LARSSON

Huddinge University Hospital

IMPACT OF NUTRITIONAL STATE ON QUALITY OF LIFE

by Prof. Jörgen Larsson

Introduction

Surgical illness is accompanied by a relatively high risk of developing malnutrition. Several studies have shown that patients admitted to a surgical ward have a prevalence of malnutrition of around 25-35% (1). In our hospital a study in 1982 showed 28% malnutrition in consecutive patients entering a gastroenterological ward, with up to 50% malnutrition in patients with malignant disease. The malnourished patients operated on showed a fivefold increased risk of postoperative complications.

It has been reported by many authors that malnutrition is associated with impairments in immunocompetence, skeletal muscle function, and wound healing (2). These impairments relate to complications in medical care and also have economic implications (3). Increased duration of hospital stay, mortality, and morbidity has been observed in different groups of malnourished patients (4).

Until now studies have mostly concentrated on metabolic effects of malnutrition and limited attention has been drawn to psychological effects and quality of life, which are of great importance for the rehabilitation of surgical patients.

The object of this presentation was to explore the relationship between nutritional status and quality of life in a group of surgical patients. Malnutrition was hypothesised to be associated with less good quality of life.

Patients

A total of 199 consecutive patients, 89 female and 110 male, were included in these studies. The mean age was 59 years (range 22-83). The patients' diagnoses are described in Table 1. About half of the patients had cancer.

Nutritional assessment

The assessment of nutritional status was based on anthropometric measurements and serum protein analyses and was performed on admission to the ward. Anthropometry was performed using percentage weight loss (%WL), weight index (WI), arm muscle circumference (AMC, cm) and triceps skin fold thickness (TSF, mm). Percentage weight index was calculated from actual weight/reference weight and used according to Warnold et al (5). Mid arm circum-ference (MAC, cm) and triceps skin fold thickness were measured at the midpoint between the acromion and olecranon processes. The arm muscle circumference (AMC) was calculated as AMC=MAC – 0.1 (TSF x 3.14).

The following criteria were used to assess malnutrition (nutritional assessment):

Weight loss		≥ 10%
Weight index		<80%
TSF:	Women	≤12 mm
	Men	≤6 mm
AMC:	Women	≤79 years ≤19 cm
		≤79 years ≤18 cm
	Men	≤79 years ≤23 cm
		≤79 years ≤21 cm
Prealbumin:	Women	<0.20 g/l
	Men	<0.26 g/l
Albumin		<36 g/l

Three or more of the criteria had to be fulfilled at the same time.

Quality of life assessment

The life quality assessment package applied in these studies was developed and tailored for this study group according to a general conceptual model previously outlined and described (6). Quality of life is defined as perceived wellbeing and life satisfaction, globally as well as within key domains. The material life sphere, usually incorporated into the concept, was considered less relevant for this study and consequently excluded. In close connection with the nutritional tests at the medical ward, the patients self-rated the current quality of their lives in a life domain rating and a wellbeing rating comprising 11 scales.

Results

According to the criteria used for malnutrition, 35% of all the patients and 39% of the patients with cancer were classified as malnourished. The diagnoses of the patients included were mostly colorectal, gastric and pancreatic cancer, inflammatory bowel disease, and oesophageal disorders.

Life domain ratings

Six of the seven life domain indices (somatic, psychological, activities, habits, structural and global satisfaction) were significantly associated with the composite index of nutritional status and with certain of the different nutritional variables. The malnourished patients showed a significant impairment in all life domain indices except for the social sphere. Of the different nutritional variables, p-Alb, Alb, and % WL were most clearly related to the patients perception of life satisfaction. Weight index, TSF, or AMC were not associated to the life domain ratings.

Well-being ratings

As to the associations between the well-being ratings, the nutritional status, and different nutritional markers, the pattern was even more consistent (Table IV). A number of the well-being ratings such as mood, endurance, anxiety, and future orientation as well as attitude to other people and loneliness were most associated with the nutritional assessment. Among the individual nutritional markers, a weight loss of $\geq$10% and a low prealbumin ocncentration were linked to a deterioration in wellbeing. Changes in AMC and TSF were not reflected in the variables of quality of life.

Discussion

Surgical disease is often associated with anorexia and metabolic alterations resulting in malnutrition. The anorexia has been attributed to an increased tryptophan concentration of the brain and is aggravated by anxiety, denial, and depression accompanying the disease (7). Inadequately controlled pain is another factor influencing the patient's appetite. The metabolic disturbances that might arise from inflammatory and malignant diseases are associated with an increase in resting energy expenditure and nitrogen excretion as a result of net protein degradation. Some patients have excessive losses of body fluids sometimes containing proteins, and changes in digestion and absorption of nutrients may contribute. Consequently it has been shown that surgical practice is associated with evidence of impaired nutritional status in 25-30 % (1). In the present study of surgical patients with and without malignant disease, 35% of the patients were classified as malnourished.

It is known that malnutrition is followed by an increased risk complications (1). The background is both somatic and psychosomatic. Somatically, serious nutritional depletion results in impaired wound healing, an impaired immune response to infection, and impairment of body function. Skeletal muscle exhibits increased fatigability and decreased muscle force. After major abdominal operations many patients show a pronounced feeling of fatigue lasting throughout the first month. The fatigue has been shown to correlate to different factors as impaired nutritional status and impaired muscle strength (2). Psychological factors have until now been considered less important. However, previous studies have showed that malnutrition is associated with apathy and depression in both malignant and benign conditions. A close connection between diet and neurotransmitter function has been observed (8). An impaired psychic response could hamper self-help motivation giving "a vicious circle" resulting in a further reduction in dietary intake.

The interest in life quality conceptualisation and assessment is spreading and becoming more intensified, but it is often poorly defined and assessed. Several different approaches are also being used, which can be confusing. The definition of quality of life used in the present study is focusing perceived functional status within six fundamental life domains (6) as well as self-rated wellbeing in 11 psychological dimensions. The wellbeing scales are intended to reflect a subject's self-conception in his/her social interaction. This is how the patient looks upon and describes himself as an independent person and in interaction with his social environment.

Our results are in agreement with those of the study (Minnesota Experiments) of partial starvation in man conducted by Keys et al during World War II. In that study, a group (n=32) of young adults lost approximately 24% of their body weight during a six-month period (9). They exhibited several changes in behaviour such as increased tiredness, muscle soreness, depression, moodiness, irritability and apathy.

In another publication by Winich, a Jewish population was followed by Jewish physicians during starvation in the Warsaw ghetto (10). Psychosomatic effects of starvation similar to those in the Minnesota experiments were found. No correlations were found between anatomical (at necropsy) and psychosomatic findings.

It should be noted that those two studies concerned starvation during rather extreme circumstances. According to the present results, similar effects can be seen in an ordinary consecutive patient sample in a surgical department.

Malnutrition affects the whole organism and its results may be described in biochemical, physiological, and psychological frames of reference. Scientific reports have so far been concentrated on the purely physical aspects. The psychological changes induced by undernutrition seem to be just as typical as are the physiological changes. Convincing relationships between nutritional status/different nutritional variables and quality of life variables were observed. The effect of nutritional support in improving quality of life must be evaluated in clinical studies.

REFERENCES

1. Symreng T, Anderberg B, Kågedal B, Norr A, Schildt B, Sjödahl R. Nutritional assessment and clinical course in 112 elective surgical patients. Acta Chir Scand 1983;149:657-662.

2. Lennmarken C, Sandstedt S, Larsson J. Effect of starvation in man on skeletal muscle function. Clin Nutr 1986;5:99-103.

3. Jendteg S, Larsson J, Lindgren B. Clinical and economical aspects on nutritional supply. Clin Nutr 1987;6:185-190.

4. Mullen JL, Buzby GP, Matthews DC, Smale BF, Rosato EF. Reduction of operative morbidity and mortality by combined preoperative and postoperative nutritional support. Ann Surg 1980;192:604-613.

5. Warnold I, LundholmK. Clinical significance of preoperative nutritional status in 215 non-cancer patients. Ann Surg 1984;199:299-305.

6. Hörnqvist JO. Quality of life. Concept and assessment. Scand J Soc Med 1989;18:69-79.

7. Wurtzman RJ. Nutrients that modify brain function. Sci Am 1982;246:50-59.

8. Wurtzman RJ, Hefti F, Melamed E. Precursor control of neurotransmitter synthesis. Pharmacol Rev 1980;32:315-335.

9. Keys A, Brozek J, Gerschel A. The biology of human starvation. University of Minnesota Press, 1950.

10. Winich M. Hunger Disease. New York: John Wiley & Sons, 1979.

Hospital food – treatment or hotel service ?

Prof. Simon ALLISON

University of Nottingham

HOSPITAL FOOD – TREATMENT OR HOTEL SERVICE ?

by Prof. Simon ALLISON

Mc Whirter and Pennington[1] showed, as did Bistrian[2] and colleagues 20 years before, that up to 40% of hospital admissions have some degree of undernutrition which in half the cases is severe. They also showed that this remains under-diagnosed and under-treated and that patients continue to lose weight during their hospital stay unless there is nutritional intervention. Since most patients rely on hospital food alone for their nutrition as an in-patient, we became interested in whether deficiencies in food provision were partly responsible for continuing weight loss in hospital, or whether this was an inevitable part of the disease process. Further, could modifications to feeding policies prevent weight loss, since this has been shown to decrease function, increase complications of illness and prolong hospital stay, not only affecting clinical outcome but also increasing costs? Tucker's[3] review suggested that, in patients with malnutrition on admission, two days earlier nutritional intervention decreased hospital stay by one day, decreasing costs in the average US hospital by one million dollars per year. The King's Fund Report[4] of 1992 also suggested that early detection and treatment of malnutrition could potentially save the British National Health Service £288 million per year.

Accordingly we designed a study :

- to measure the energy and protein value of food provided by the hospital menu,
- to measure the proportion of food being wasted by being left on the plate and not consumed,
- how far food provision and consumption met the estimated requirements of patients.
- whether a fortified menu could improve intake and decrease waste.

Before describing our own studies and those of others, it is first necessary to consider the targets for food intake which meet the requirements of the sick. Illness results in loss of appetite and, in some cases, an increase in resting metabolic expenditure, e.g. 13% increase per 1^{o}C temperature over 37^{o}C. On the other hand, energy expenditure due to activity is lessened and a period of starvation or loss of cell mass also diminishes metabolic rate. Refeeding is also usually associated with 5-15% increase in metabolic rate depending on the rate of feeding.

Kondrup[5] in Copenhagen addressed the problem of the energy needs of the average hospital patient by measuring the amount needed to maintain or gain weight between admission and discharge. Measuring nutritional intake and weight changes in several hundred in-patients, he found that, on average, an energy intake which met 1.3 x BMR (by Harris-Benedict[6] estimation) would maintain weight, whereas weight gain required 1.5 x BMR. This contrasts with the average requirements of a healthy 70 kg man of 1.7 x BMR. These energy requirements for patients correspond to those found by others and approximate to 30 kcal/kg/day although, of course, there will be some patients who for various reasons need more or less than this. Most patients therefore need 1800-2200 kcal/day, apart from those with severe catabolic illness or very low weight. A 40 kg elderly woman, for example, is unlikely to require more than 1500 kcal. Protein supply is just as important but, being the most expensive substrate, increasing its provision has greater cost implications. Increasing the energy density of food has proved successful in meeting energy requirements but in several studies (see below) it has proved more difficult to increase protein intake to required levels.

Most authorities would agree that the WHO recommendation of 0.7 g/kg/day is too low, since it not only assumes normal health, but first-class protein and an adequate energy intake as well. Most patients, particularly the elderly, need 1-1.5 kg/day while in hospital. Inadequate energy and protein intake also implies inadequate mineral and micronutrient intake, particularly as vitamin levels may be reduced in the preparation, transport and interval to serving of meals.

In a series of studies carried out by our research dietitian, Arlene Barton,[7,8] we assessed how far our hospital food met these requirements.

- Nutritional value of the menu
  The energy and protein content of 600 meals on our menu was measured by weighing. This showed that the average day's menu could provide 2438 kcal and 67 g protein, provided that all the food is consumed. We therefore concluded that with 100% the menu could meet the energy needs of the average patient, although it barely met protein needs.

- Wastage and intake
  These studies were carried out on one ward from each of the specialities, Medicine, General Surgery, Orthopaedics and Health Care of the Elderly. The weight of food wasted was measured after lunch and supper over two menu cycles, i.e. 28 days. Wastage and intake were checked against individual patient studies on the same ward. The results showed that the hospital menu could provide over 2000 kcalories a day, although protein provision was barely adequate. We found high wastage rates of > 40%, resulting in energy and protein intakes within all specialities which were less than 75% of that recommended. We concluded that present

hospital feeding policies are not well designed to meet the nutritional needs of the sick. As a result much food is wasted, nutritional requirements are not met and patients continued to lose weight while in hospital. This has undesirable clinical and economic consequences, and new policies were therefore required.

- Intervention study
  Following a survey of elderly patients who complained that portion sizes were too large, we reduced portion sizes by 20% and increased energy density. In the elderly this resulted in a reduction of waste and an improvement in energy intake from 70 to 96% of that recommended. Protein intake was improved but targets were not fully met unless an additional cooked breakfast was also provided. It's clearly more difficult to fortify protein than energy.

Our data on food waste were similar to those reported by Edwards and Nash[9] and the resulting food intake similar to values reported by others – see table 1 – taken from the British Association of Parenteral and Enteral Nutrition Report, Hospital Food as Treatment. The BAPEN Report used the term 'food chain' to describe the entire process of nutritional care using hospital food or nutritional support. The report concluded that this chain is as strong as its weakest link, where arrangements for serving, for example, may be able to nullify all the efforts of those trying to produce good food. Consequently, if food quality is poor or inappropriate for the patient, it will not be consumed despite the efforts of ward staff. The food chain is outlined in Figure 1, and incorporates the concept of adequate screening of patients for nutritional problems, continuing monitoring, the devising of appropriate nutrition care plans and menu for each patient.

It supposes selection of a menu tried and tested to meet the needs of the sick, preparation which brings it to the bedside in an appetising and nutritious form, and serving in a way which allows it to be accessed by disabled patients, who may need some help also with eating. The demands on nursing time in modern medicine are such that it is very difficult for nurses always to play a direct part in feeding patients, and it may be appropriate to consider additional nutrition care staff on the ward to help with the process of screening, menu ordering, serving and help with eating. The screening process should also be designed to select those patients who need more in depth assessment by a dietitian or clinician, and special nutrition provision using oral supplements or even artificial nutrition by the enteral or parenteral route.

The whole of nutritional management of patients needs to be part of a co-ordinated policy throughout the hospital, with clearly defined standards, objectives and audit. Essential to the whole process is adequate training and motivation of staff. These issues have all been emphasised in several recent UK reports including the Nuffield Trust Report of 1999 and the BAPEN Report

of the same year. There seems to be a growing recognition of the problem and a willingness by Governments to address it. The European Society of Parenteral and Enteral Nutrition supports the development of minimum European standards which will hopefully arise from this meeting and the forthcoming Report and Recommandations on food and nutritional care in hospitals of the Council of Europe Committee of experts on nutrition, food safety and consumer health.

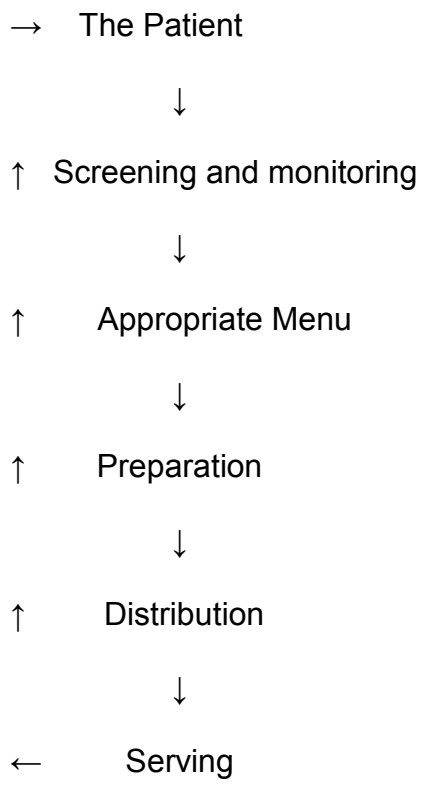
Table 1

Hospital food wastage and intake

		Energy intake as % of recommended	
Reference	**Waste**	**Energy**	**Protein**
Barton et al 2000 (Nottingham)	34-42%	70-75%	70%
Edwards and Nash 1997 (Bournemouth)	17-67%	-	-
Howard 1997 (Bristol)	-	-	40-75%
Boyle 1997 (Luton & Dunstable)	-	-	30-75%
Gall et al 1997	-	75%	70%

Figure 1:

The Food Chain



REFERENCES

1. McWhirter JP. Pennington CR (1994) Incidence and recognition of malnutrition in hospital. *British Medical Journal* **308**, 945-948.

2. Bistrian BR, Blackburn GL, Vitale J, Cochran D & Naylor J (1976) Prevalence of malnutrition in general medical patients. *Journal of the American Medical Association* **253**,1567-1570.

3. Tucker H (1996) Cost containment through nutrition intervention (1996) *Nutrition Reviews* **54**, 111-121.

4. .King's Fund (1992) *A positive approach to nutrition as treatment*. King's Fund Centre, 126 Albert, Street, London NW1 7NF.

5. Kondrup J, Bak L, Stenbaek Hansen B, Ipsen B & Ronneby H (1998) Outcomes from nutritional support using hospital food. *Nutrition* **14,** 319-321.

6. Harris JA & Benedict FG (1919) *A biometric study of basal metabolism in man*. Carnegie Institute of Washington. Publication No.279.

7. Barton AD, Beigg CL, Macdonald IA & Allison SP (2000) High food wastage and low nutritional intakes in hospital patients. *Clinical Nutrition* **19**, 445-449.

8. Barton AD, Beigg CL, Macdonald IA & Allison SP (2000) A recipe for improving intakes in elderly hospitalised patients. *Clinical Nutrition* **19**, 451-454.

9. Edwards J & Nash A (1997) Measuring the wasteline. *Health Service Journal* November, 26-27

Matching the nutritional needs of hospitals through catering practices

Dr Bent Egberg MIKKELSEN

Catering Centre
Nutrition Department
Danish Veterinary and Food Administration

MATCHING THE NUTRITIONAL NEEDS OF HOSPITALS THROUGH CATERING PRACTICES

by Dr Bent Egberg MIKKELSEN

Introduction

This paper takes a closer look at the role of the catering practices in improving the nutritional care at hospitals. In order to do so we must first focus on the role of catering in a modern hospital environment. Catering has traditionally been looked upon as a peripheral service, neccesary since a modern hospital cannot rely on the relatives bringing the food to the patients, but otherwise an appendix to the hospital environment.

This is underlined in the location of the catering premises, which normally is in the far end of the hospital. The catering service in the eyes of hospital professionals is like a cleaning service, an operation that is only paid attention to when it is not there. And this is also reflected in the way catering staff are looked upon: there is not much status involved in supplying hospital catering compared to the status involved in performing heart surgery.

The meaning of the word *to cater* is: to provide food, service, etc., as for someone a party, wedding, for a banquet or in this case a hospital. However it also means: to provide or supply what amuses, is desired, or gives pleasure, comfort, etc.

This means that catering is a lot more than just provision of meals and that is the basic idea in this paper. Food and the underlying catering service cannot be understood alone as a question of *supplying* food. For most patients the meal is also regarded as an event and an experience. In fact it is surprising what good food under the right circumstances can do.

What are catering practices?

In the context of this paper catering practices means the sum of all the routines and practices that are related, not only to the provision of food and meals, but also all the secondary factors that constitute a good meal experience for the hospital patient. According to this definition, catering practices extend far beyond the kitchen door. And as a result catering practices involve many other staff groups than the catering staff. This means that improved catering practices require the involvement of the hospital management, the catering department and the hospital wards.

The role of catering practices

It is important to stress that the catering department alone cannot meet all the nutritional demands of hospitals. It takes a multidisciplinary effort. Why is it so? Why is it that patrons in a restaurant may often have an extraordinary experience, when the meal experience in hospitals are so often criticised?
One of the differences is that in the restaurant logistics are simpler. The waiter and the cook often succeed in translating the wishes of the guest into a good meal.

In the case of the hospital food environment things are more complicated because a range of different actors are involved in catering. The physician decides about diagnosis and the possible nutritional implications of it. Sometimes also a dietician is involved in this process. The nurses provide the practical nutritional care and have the responsibility for the environment in which meals are served at the ward. The catering staff produces the meal and the porters take it to the ward. And above all the management decides about the role food and nutrition has in the overall hospital environment.
The implication of this is that for the meal experience to be successful all actors must agree on the importance of food and meal service and in addition they must be able to translate this understanding into concrete action.

The traditional understanding of catering practices is that catering is an operational issue that can be handled by almost any caterer and this approach cause many problems.

The role of the management

Management commitment is essential when it comes to improving catering practices. Management must define a policy for the catering service. Whether catering is in the hands of the hospital itself or in the hands of a contract caterer, management must ask itself: why are we maintaining catering service and what are our goals? Many hospital managers fail to do so.

Once a policy is defined the goals must be translated into concrete action. Here again the management commitment to improve catering practices is important. Modern health care organisations are overflowing with change processes and new initiatives and nutrition is only one of the themes that wants to be put on the agenda. If catering practices are to be improved not only inside the catering premises but also on the ward, a number of different staff groups have to be motivated and work in the same direction.

But how can practices related to serving of meals be put on the agenda in the busy daily life of the hospital? Experience from industrial enterprises manufacturing consumer goods suggests that quality management, as a conceptual framework is part of the answer.

Modern industrial enterprises have learned that if quality is to be put on the agenda at *all* levels in the company the task cannot be left to specialists, but

must be backed up with strong support from the management. The management must not only *speak* about nutrition and catering; the management must also, in the way they act, *show* that it is important.

Multidisciplinary quality circles are a good example of how to organise the work related to improving catering practises and such circles are well known in health care facilities. Further the management should appoint a member of the management that is responsible for nutritional care and food service and the management should support the establishment and function of Nutritional steering committees (NSC) and Nutritional support teams (NST). In more general terms it should create a good environment for cross-functional and interdisciplinary co-operation.

The role of the catering department

Media often focuses on the poor hospital catering as the main reason for undernutrition. That is an oversimplified view. Many catering managers and workers do their best. It is the nature of the catering service as a part of a complex hospital organisation that is part of the problem.

But of course many of the catering practices result from decisions made within the catering department. This includes the technology and logistics used for producing and distributing the meals and the way the work is organised in the catering premises.

The development of hospital catering technology has been driven by the need for cost effectiveness in the catering operations. In the eighties this development led to central plating of meals and sophisticated systems that could transport meals to the wards. Cook chill systems took over the old cook serve based systems.

Today much attention has been focused on decentralising the meal service and thus the role of the catering department is beginning to change. Instead of supplying ready meals the catering department should function as the terminal where foods prepared and semi prepared are sent on to the wards where the final touch is added. Front cooking has been suggested as term to describe this trend, which brings some of the activities of cooking closer to the patients.

The catering department also has an important role in establishing a close contact with the wards. A “champion” appointed by the catering department is a way to make sure that positive as well as negative feedback from the wards is given to the catering department. The catering department also has a responsibility for developing user-friendly and flexible ordering systems in co-operation with the wards.

And of course the catering department has an important role in supporting the Nutritional steering committees (NSC) and Nutritional support teams (NST) of the hospital.

The role of the ward

Most patients at hospitals take their meal at the ward either at the bedside or in a ward dining room. This makes the ward a very important place because that is where the meal – when successfully eaten – becomes nutrition. The meal environment, the atmosphere, the attitude of the staff, the sounds and light, the interior design, the furniture are all important factors that influence the meal experience.

These factors of course cannot be influenced by the catering department but is the responsibility of the ward staff hopefully with the support of the management.

Many of the things that support a good meal experience are common sense that theoretically can be changed easily. But in real life it can be difficult. Sometimes improved catering practises may conflict with ward routines that has been around for decades and in any case improved catering practises often require that staff change their procedures and routines. In other cases initiatives that can improve catering practises are costly and may force ward staff to choose between initiatives.

Catering practises that can help improve the patient's meal experience include adequate menu options, easy ordering routines, convenient meal hours, friendly dining environments, easy access to information about meal service.

Screening hospital patients against undernutrition

Prof. Jean-Claude MELCHIOR

Hôpital Raymond Poincaré
Garches

SCREENING HOSPITAL PATIENTS AGAINST UNDERNUTRITION

by Prof. Jean-Claude MELCHIOR

Introduction and definitions

Undernutrition is a major worldwide public health problem. In developing countries it is a consequence of malnutrition (nutrient intake inappropriate to people's needs) and affects between 60 and 80% of children (or nearly 100 million children worldwide), not to mention the adults who are also under-nourished. However, it does not spare economically advantaged countries, on the one hand because in the growing "fourth world" undernutrition often goes hand in hand with precarity, and on the other because it is often caused and/or aggravated among hospital patients by the presence of disease. No matter which hospital department is considered, it is estimated that between 30 and 50% of patients suffer from undernutrition (see Table 1).

Undernutrition can be defined as a condition in which there is a specific deficiency in energy, protein or any other nutrient, leading to a measurable change first in bodily functions and then in body composition in line with an intensification of the symptoms of illness. As a rule it can be reversed by means of an appropriate nutritional programme.

In this report I shall describe the multiple physiopathological forms of undernutrition and its effects on hospital patients. I shall then consider the tools available for assessing undernutrition and propose a strategy for screening and for using these tools. In order to limit the length of the report I shall restrict myself to observations concerning adults between 15 and 75 years of age. However, although the tools would vary a certain amount in the case of children and the elderly, the strategy would remain the same.

Physiopathology and consequences of undernutrition

A decline in the nutritional state, or undernutrition, is often the result of insufficient protein and/or energy intake for patients' requirements, leading to tissue loss which varies quantitatively and qualitatively according to the circumstances. Where tissue loss is a consequence of undernutrition, death results when no treatment is given and protein mass drops by 50%. Insufficient intake is not the only cause of undernutrition. Metabolic changes induced by situations of aggression (whether psychological, traumatological, infectious or inflammatory) nearly always result in the loss of tissue and, more specifically, protein, leaving a situation ripe for undernutrition. Achieving a "perfectly balanced" intake does not always put a complete stop to this decline, but it can at least mitigate the effects.

When undernutrition is simply the result of insufficient nutritional intake, it is usual to categorise it as one of two extreme forms :

- the first is **marasmus**, an adaptive form of undernutrition which is characterised by an energy deficit and by the wholesale wasting of adipous tissue in particular. In this form, bodily homeostasis is preserved for a long time and pathological consequences are delayed.

- the second form, **kwashiorkor**, is the consequence of protein rather than energy deficiency. Weight loss is concentrated in the muscular mass and the clinical pattern is notable for oedema, which at least partly conceal the fact of weight loss. However,

weight loss is far more severe and has far greater functional consequences than in the case of marasmus (see Figure 1).

Although this distinction is somewhat over-simplified and the two forms are rather too sharply contrasted, they mark the *de facto* extremes of a continuum comprising many intermediate forms of undernutrition which are a daily part of hospital life. The metabolic aggression caused by illness gives rise to a clinical pattern which resembles that of kwashiorkor and is frequently labelled "cachexia".

The consequences of undernutrition are well established: as an independent prognostic factor in the worsening of illness it delays scarring, causes immunodepression, boosts perioperative and hospital mortality, prolongs the average length of hospitalisation and increases the incidence of nosocomial infections. What is more, it adversely affects functional capacity and has repercussions on the quality of life.

It is therefore crucial to carry out a systematic assessment of patients' nutritional state on admission and to take this assessment into account in routine clinical checks and everyday care. Nutritional assessments must be repeated at regular intervals during the hospitalisation period, especially if the latter is protracted, since chronic illness and lengthy hospital stays are aggravating factors in undernutrition.

Tools used in assessing undernutrition

- The principal indicator of a patient's nutritional state is his/her weight. This must be calculated in proportion to height – more specifically to the square of height. The ratio of weight (in kg) to the square of height (in metres) is known as the Quetelet or Body Mass Index (BMI) :

$$\textbf{BMI = weight (kg) / height}^2 \textbf{ (m)}$$

BMI normally ranges from 18.5 to 25. A normal BMI, and even a BMI greater than 25, is no guarantee against undernutrition. It is therefore important also to take account of weight fluctuations.

- Where weight loss is sufficiently rapid and severe it is a sign of undernutrition. Weight loss figures of 2% in a week, 5% in a month or 10% in six months should arouse the same level of concern.

- Clinical checks must be used to look for clinical indications of undernutrition (such as oedema, muscle wasting and cutaneous signs). However, none of these symptoms are unequivocal.

- The principal biological markers used in the diagnosis of undernutrition are doses of albumin and transthyretrin. While hypoalbuminemia is a marker for protein undernutrition, it is misleading as a marker in the context of medico-surgical metabolic aggression. Furthermore, in cases of adaptive undernutrition (marasmus) albuminemia remains normal until death is inevitable. Biological markers such as these which are not infallible in systematic screening for undernutrition cannot be used in isolation.

- Body composition measures such as anthropometry, impedancemetry and bophotonic absorptiometry would be the most accurate means of assessing undernutrition, but these techniques cannot and must not be used systematically with all patients.

- The same is true of the evaluation of functions whose decline may indicate undernutrition, such as muscular function, respiratory function and scarring.

In response to the difficulty of finding a means of assessment which would be valid in all circumstances and for all patients, whatever their state of health, many multivariate indices have been devised. They usually combine anthropometric data, biological data and/or factors relating to patient autonomy or the degree of illness. They are limited either in that they are too basic and over-simplistic or in that their highly complex nature makes them unsuitable for daily application outside clinical research. Different nutritional scores or indices are designed for different tasks. While some are descriptive, others predict the risk of undernutrition (or mortality) and still others are intended to identify which patients will benefit from specific nutritional support measures.

One index in particular stands out. The Nutritional Risk Index (NRI), a very simple tool developed by Buzby *et al*, is among those most commonly in use today. It is based on plasmatic albumin levels and weight fluctuations:

NRI = 1.519 x albuminemia (g/l) + 0.417 x
(present weight / normal weight) x 100

Patients are grouped in one of three categories:

- **NRI above 97.5%** (normal nutritional state)
- **NRI from 83.5% to 97.5%** (moderate undernutrition)
- **NRI below 83.5%** (severe undernutrition)

Patients suffering weight loss masked by the presence of oedema but in combination with hypoalbuminemia below 30 g/l are grouped with those suffering severe weight loss without hypoalbuminemia. The index therefore takes account of the non-homogenous physiopathology of undernutrition and serves to locate patients who fall between the two stools of marasmus and kwashiorkor.

Having first proved itself in the surgical environment, the index was then introduced into many branches of pathology, where it has demonstrated its strength. It may also be used to identify patients who can benefit from and require artificial nutritional support. One of the practical limitations of this valuable tool is that it cannot be used systematically in the course of screening.

Strategy for assessing undernutrition in hospitals

There are several basic requirements for such a strategy. All patients must be given an initial systematic assessment within 48 hours of admission in the form of a simple, rapid screening procedure which all medical and paramedical personnel (doctors, dieticians, nurses and auxiliaries) are capable of performing. Screening must allow those patients whose nutritional state is normal to be quickly and simply excluded.

A more detailed second level of assessment, using the Buzby Index, can be offered to the remaining patients. Those registering above 97.5% on the index will be cleared in the same way as at the first level. Patients whose NRI (below 83.5%) indicated that they were severely under-nourished would require the intervention of a specialist, and enteral or parenteral nutritional support will have be considered because of the likelihood, given the degree of undernutrition,

that oral feeding alone will be insufficient for nutritional recovery. A dietician will have to be called in for patients whose NRI indicates moderate undernutrition in order to analyse their nutritional intake and decide whether this is qualitatively and quantitatively sufficient in each case, given the patient's pathology, needs and ability to feed him/herself. At this stage it is particularly important to undertake a third level of assessment taking account of all those factors which might induce the decline from moderate to severe undernutrition. Such aggravating factors will include insufficient ingesta, age (the very young and very old are more vulnerable and likely to become undernourished more quickly), pain, multiple active pathologies, comorbidity factors (diabetes, atheroma, cancer, chemotherapy, renal insufficiency, and cardiac and/or respiratory insufficiency) and lengthy periods of hospitalisation.

This strategy allows patients to be assessed at the start of each period in hospital. It also enables undernutrition existing prior to admission to be isolated from that acquired or aggravated while in hospital. The initial screening process must be repeated every seven to ten days, this being the median length of admission to short-stay facilities in Europe. With a few modifications to technique, the principle underlying this three-level strategy can also be applied in the paediatric and geriatric fields.

Conclusion

Notwithstanding the imperfect nature of assessment tools, it is possible to carry out systematic screening for undernutrition in hospitals. The first step is to weigh the patient and take note of recent weight fluctuations. The body of patients identified by the first level of assessment as being at risk may be given a second, more precise test aimed at excluding the possibility of undernutrition, necessitating the immediate intervention of a specialist and, where necessary, the administration of artificial nutritional support, or requiring the implementation of a team strategy to evaluate aggravating or comorbidity factors and optimise diet. In all cases where hospitalisation is necessary for longer than a week, patients should again be systematically screened at ten-day intervals.

REFERENCES

1- Melchior J-C, “Dénutrition – Malnutrition”. In: Traité de Médecine, Godeau P Flammarion Ed, Paris 2001, pp. 1478-85.

2- Keys A, Brozek J and Henschel A, The Biology of Human Starvation, Minneapolis, University of Minnesota Press, 1950.

3- Windsor JA and Hill GL, “Weight loss with physiologic impairment: a basic indication of surgical risk”, Ann Surg 1988, 207, pp. 290-296.

4- Jacobs DO, “Use of bioelectrical impedance analysis measurements in the clinical management of critical illness”, Am J Clin Nutr 1996, 64, pp. 498s-502s.

5- Ingenbleek Y and Carpentier YA, “A prognostic inflammatory and nutritional index scoring critically ill patients”, Int J Vit Nutr Res 1985, 55, pp. 91-101.

6- McClave S, Mitoraj TE, Thielmeier KA and Greenburg RA, “Differentiating subtypes (hypoalbuminemic vs marasmic) of protein-calorie malnutrition: incidence and clinical significance in a university hospital setting”, JPEN 1992, 30, pp. 80-82.

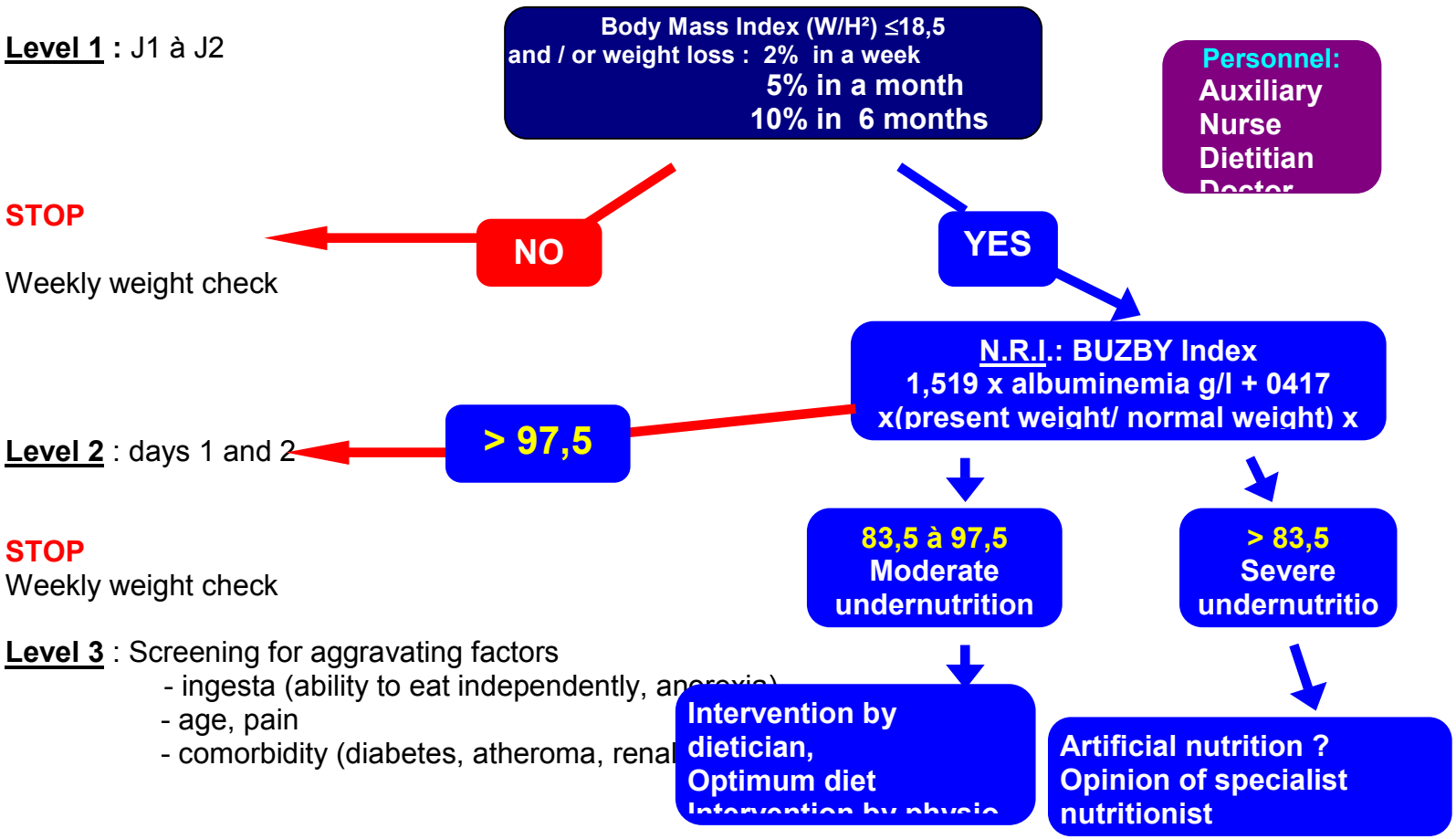
7- Buzby GP, Mullen JL and Matthews DC, “Prognostic nutritional index in gastro-intestinal surgery”, Am J Surg 1980, 139, pp. 160-167.

8- The Veterans Affairs Total Parenteral Nutrition Co-operative Study Group, “Perioperative total parenteral nutrition in surgical patients”, N Engl J Med 1991, 325, pp. 525-532.

Table 1: incidence of undernutrition in hospitals

Population (n=)	% undernourished	Reference
Surgery (131)	54	Bistrian *et al* 1974
Medicine (201)	45	Bistrian *et al* 1976
Surgery (105)	12-55	Hill *et al* 1977
Medicine (134)	46	Weinsier *et al* 1979
General (200)	31.5	Willard *et al* 1980
Orthopaedics (82)	48	Dreblow *et al* 1981
Haemodialysis (58)	62	Thunberg *et al* 1981
Surgery (90)	30-40	Perrot *et al* 1982
Geriatrics (59)	61	Bienia *et al* 1982
Paediatrics (515)	30	Girardet *et al* 1989
Geriatrics (324)	41	Constans *et al* 1992
Geriatrics (40)	46	Alix et *al* 1992

Strategy for diagnosing undernutrition in hospitals (adults between 15 and 75 years of age)



- insufficiency, cardiac/respiratory,
- insufficiency, cancer
- multiple active pathologies
- lengthy hospital stay

THE EXTREMES OF UNDERNUTRITION

Marasmus **Kwashiorkor**

Normal alb **Physiopathological continuum** **Hypoalb, oedema**

- PEM in balance (P/cal)
- Physiological adaptation

- Protein deficiency (P/cal)
- Secondary metabolic aggression (cachexia)

How to ensure and document that patients eat adequately

Dr Jens KONDRUP

Rigshospitalet, Copenhagen

HOW TO ENSURE AND DOCUMENT THAT PATIENTS EAT ADEQUATELY

by Dr Jens KONDRUP

It is well known that a large proportion of patients in hospital is malnourished. In a recent study, the prevalence was found to be 40% among newly admitted patients (McWhirter and Pennington, 1994). In additon, they found that 75% of the malnourished patients, who remained in hospital for more than one week, lost further weight, clearly showing the responsibility of the hospital for the occurence of malnutrition in hospitals.

According to a questionnaire study (Rasmussen et al., 1999) among doctors and nurses, most of them agreed that nutrition support would prevent complications during hospitalization. However, only about 20% of them performed nutritional screening and/or assessment, including recording of dietary intake and body weight. The most common reasons given for this lack of clinical practice were insufficient knowledge, low priority, unclear assignment of responsibility and lack of procedures or guidelines.

A strategy

The critical steps in providing food to patients are shown in Fig 1 which is a modified version (Kondrup, 2001) of the food chain described in the BAPEN report 'Hospital food as treatment' (1999). It requires an effort at all steps to make the cycle turn. A key issue is proper screening to identify patients at-risk, who can be accepted by everyone involved in the cycle as deserving special attention. Monitoring is important with the purpose of documenting that the patient actually receives appropriate quantities of food. It is also important in order to learn, largely by trial and error, which kinds of food that different patient categories can tolerate, i.e. for the process of working out an appropriate menu. The food cycle receives input from cookery skills and recipes, and this input is one of the rate limiting steps of the cycle. The conditions of large scale production and the constant strains to reduce costs limit cookery and recipes. However, in many cases, those responsible for this give away too easily, since they never are confronted with actually serving the patient. The distribution system is important in many respects, not the least in assuring that food ordered for individual patients actually reaches these patients. Lack of appetite, due to the disease, is probably the main reason for hospital malnutrition. Therefore, the ambiance, with its elements of informing the patient, preparing the patient, motivating the patient, urging or feeding the patients, and other aspects of showing care, is another rate limiting step of the cycle. The forces that make the cycle turn are nutrition science, food policy and food culture. Nutrition science helps in providing information about the adequate intake of essential nutrients and, based on randomized controlled trials, in providing

evidence about clinical benefits of nutrition support, and about the conditions under which these benefits can be expected. The hospital's food policy is an important signal to patients and staff, that attention to nutritional problems has a priority in the institution, and a food policy e.g. endorsed by a govermental agency certainly is a strong reflection of the political interest in this area. However, the food culture among staff members of the hospital is probably the most important force. If nurses and doctors do not remember their own food culture at work, neither nutrition science nor food policy will be materialized. Also, the interest and concern among nurses and doctors help creating the need for nutrition science and food policy.

In order to elucidate where the cycle has its weak points, an analysis of 750 patient admissions to three hospitals: a university hospital, a regional hospital and a local hospital was undertaken (Kondrup et al., 2001). Twenty-two per cent of the patients were found to be nutritionally at risk. Only 25% of these received an amount of nutrients >75% of estimated requirements. Each time a disagreement between the actual clinical activity and a well-defined standard was observed, the nurse taking care of the patient was questioned according to a preformed questionnaire. The departments had only performed a nutritional screening of 60% of the patients, the main reason being lack of instructions to do so. Of those found to be at-risk by the departments, only 47% had had a nutrition plan worked out, the main reasons being lack of training in doing this, and the custom of simply observing the patient. The main reasons given for the insufficient intake were lack of appetite (not being attended to), and the lack of tools to estimate requirements and nutritional value of meals served. In some cases, the intake had been inadequate because the food prepared had not been suitable for the patient. It was concluded, that in order to improve nutritional support, detailed instructions for screening of patients have to be worked out at the executive level, that the staff should be trained in theoretical and practical aspects of planning and monitoring nutritional support. The training should include aspects of overcoming problems related to chewing, swallowing and reduced appetite. Factors related to food service *per se* did also play a role, but to a smaller extent than the other aspects mentioned. It is, however, anticipated, that once training in screeening etc. is implemented, the nature and quality of food will require increased attention.

Screening and assessment of nutritional risk

Several screening systems have been developed to assess nutritional risk. However, in most cases these systems are predictive in nature, e.g. of postoperative complications. It is difficult, or impossible, to find the documentation, based on intervention studies, that clinical outcome will be improved when patients identified by these system are given nutritional therapy. The Danish Society for Parenteral and Enteral Nutrition is in the process of developing a screening and assessment tool based on available clinical trials (Kondrup, 2001). It rests on the assumption, that it is the combination of

malnutrition and severity of disease (i.e. stress metabolism) that leads to the indication for nutritional therapy. Severe malnutrition or severe stress metabolism may by themselves be indications for nutritional therapy. When moderate malnutrition is present in combination with a mild severity of disease, or mild malnutrition is present in combination with a moderate severity of disease, it is also indicated to perform nutritional support. The system is transformed to a numeric score in which malnutrition and severity of disease are each graded as 0-3, giving a range of total scores = 0-6. By such a screening system based on intervention trials, it follows that a worse clinical course can be expected if patients fulfilling risk criteria are not identified and treated satisfactorily. The system is gradually being introduced in hospital departments, and it has been included in the recommendations for food in hospitals, published by the national food agency (Pedersen et al., 1999).

Successful nutritional therapy

A nutrition unit was formed at our hospital in 1990 to improve nutritional care. The hospital is a 1200 beds' national university hospital, having local, regional and national treatment responsibilities. Among the patients referred to our unit, about half are malnourished and/or have a low appetite. In all these cases, we perform a formal nutritional risk assessment. In most cases, a little dietary advice and a brief plan is required, and these suggestions can be implemented by the departments themselves. However, about 200 patients annually are considered to be at-risk patients according to the system described above and subjected to nutritional therapy.

Energy requirement is calculated by the factorial method (Kondrup et al., 1998). A dietary plan is worked out, usually consisting of a combination of the regimes available: regular diet (see below), super diet (see below), liquid supplements, tube feeding, parenteral feeding. A plan for monitoring outcome is also defined: daily registering of dietary intake and weight recording 3 times weekly when possible. If body weight is not increasing or stable, as defined as the goal from the beginning, the amount of food or artificial feeding is adjusted on a weekly basis.

The regular hospital diet has been changed to be as similar to common food in the Copenhagen area as possible. Ill-placed health food, or institutional mega-cooking, will produce food aversion and should be avoided. Our preparation system is cook-chill, since this is the most labour-cost effective system. Food is served as a buffet for lunch and supper, and a large selection of sandwiches and frozen dishes are available as snacks between meals. For the regular diet, the main meals are only anticipated to cover about 2/3 of the requirements, the remainder being covered by the snacks.

The super diet was developed from the experience by our dietitians. The main kitchen worked out a menu, consisting of 9 appetizers/snacks, 9 main dishes for

supper as alternatives to the regular menu, a variety of extras for supper (mashed potatoes with cream etc.), and 7 desserts. This menu is presented to the patients in a folder, with the appearance somewhat like that of a restaurant menu card, with each serving's content of energy and protein stated, instead of its price. The patient is thus involved in working out her personal diet. Other features of the super diet concept is that a dietitian is included to follow up on the dietary intake on a daily basis. This adds to the patient's motivation to eat, and also motivates her nurses to encourage him, since the patient, being a risk patient, will be transferred to one of the other regimes if the intake is not satisfactory. Also, the super diet is available in a limited number only, and it will not be used for patients who simply are particular about the regular diet. This adds to the sense of the patient as being well taken care off. There is no possibilty for à la carte choices, but the patients' suggestions for future modifications of the super diet are appreciated. The dishes are prepared in the kitchen and then frozen. When the dish arrives in the department, it is heated in a micro-wave oven, arranged on a plate and served by the nurse. This also adds to the ambiance of individual care associated with the super diet concept. Examples of the main dishes for supper are: fish with cream sauce (1500 kJ, 22 g protein), chicken with gravy (1750 kJ, 19 g protein), beef stew (1900 kJ, 26 g protein), shrimps and mayonnaise (1250 kJ, 13 g protein) and tuna fish mousse (1150 kJ, 12 g protein). A protein energy percentage of about 18 is aimed at, but actual protein intake is not recorded in most cases. The overall concept is to administer a balanced diet and therefore only natural foods are used in our diets. The use of dextrin, protein powder etc. is not allowed.

Results

Data from each patient (initial screening, energy requirement, dietary regime, energy intake, body weight) are recorded in a database, as weekly averages. Patients who completed less than 1 week of nutritional therapy, due to being dismissed from the hospital or death, were not entered into the database. Table 1 shows the initial characteristics of 1149 patients entered into the database so far. On average, they were moderately underweight, had a moderate recent weight loss (the weight loss had occurred over 2.2 months on average) and they were judged to have a moderately impaired nutritional status and a moderate degree of stress-metabolism. The combined nutritional risk score indicates a moderate degree of nutritional risk. The energy goal includes energy allowing for weight gain in those patients where this was desired. The duration of nutritional therapy was 4.9 weeks, ending when the patient was able to eat sufficiently on his own, was dismissed from the hospital, or died. The long duration illustrates that these patients belonged to a category that is clearly separate from the average hospital patient. The diversity of dietary regimes employed is illustrated by the fact, that for approximately 2 weeks, artificial feeding was the dominant regime while in the remaining approximately 3 weeks, food as the regular diet or super diet was the dominant regime. More details in specific patient categories are presented in (Kondrup, 2001). These data illu-

strate that all regimes are used interchangeably and therefore should be available to carry out nutritional support in a broad selection of hospital patients.

An intake <75% of estimated maintenance requirement has been found to be invariably associated with weight loss (Kondrup, 2001) and therefore an intake below this level is considered a treatment failure. As seen in Table 1, six percent of the patients were treatment failures according to this criterion.

In patients who could be weighed, a weight loss >5% during the approximately 5 weeks' treatment was also considered a definite treatment failure. About 10% of the patients were treatment failures according to this definition. In most cases, these treatment failures were patients in a very good nutritional status before being subjected e.g. to bone marrow transplantation, and we were reluctant to start tube feeding or prolong parenteral nutrition in these patients. Still, they were treatment failures and means of increasing oral intake in these patients should be further developed.

Conclusion

When our experience is compared to the food cycle in Fig 1, we have introduced screening and risk assessment, monitoring of the patients' intake and preferences, elaborated upon the menu and collaborated with the main kitchen to improve cookery techniques and preparation, and improved distribution, serving and ambiance. The result was that only approximately 10% of the risk patients experience significant weight loss and only approximately 5% have a seriously insufficient intake, indicating that nutritional problems can be dealt with satisfactorily. Other successful attemps to increase food intake in hospitals are discussed in (Kondrup, 2001). It is apparent from these other studies, that the most common features have been improvement in the menu and preparation of food, but also screening to identify those patients who in particular needed assistance was commonly employed. In addition, monitoring of food intake was included in most cases. It is apparent from these results, that the combination of screening, improving the hospital menu and training in monitoring are key elements in ensuring and documenting that patients eat adequately in hospitals.

REFERENCES

(1999) *Hospital Food as Treatment.,* Allison, S.P. (editor) British Association for Parenteral and Enteral Nutrition, Maidenhead, UK.

Kondrup, J. (2001) *Clinical Nutrition,* **20 (Supplement 1),** 153-160.

Kondrup, J., Bak, L., Hansen, B. S., Ipsen, B. and Ronneby, H. (1998) *Nutrition,* **14,** 319-21.

Kondrup, J., Johansen, N., Plum, L. M., Bak, L., Larsen, I. H., Martinsen, A., Andersen, J. R., Bærnthsen, H., Bunch, E. and Lauesen, N. (2001) *Clinical Nutrition,* **21,** 45.

McWhirter, J. P. and Pennington, C. R. (1994) *Bmj (Clinical Research Ed.),* **308,** 945-8.

Pedersen, A. N., Ovesen, L. F. and (editors) (1999) *Recommendations for Food in Public Institutions in Denmark,* Danish Ministry of Food and Agriculture, Copenhagen.

Rasmussen, H. H., Kondrup, J., Ladefoged, K. and Staun, M. (1999) *Clin Nutr,* **18,** 153-8.

Table 1:

Nutritional therapy in 1149 at-risk patients

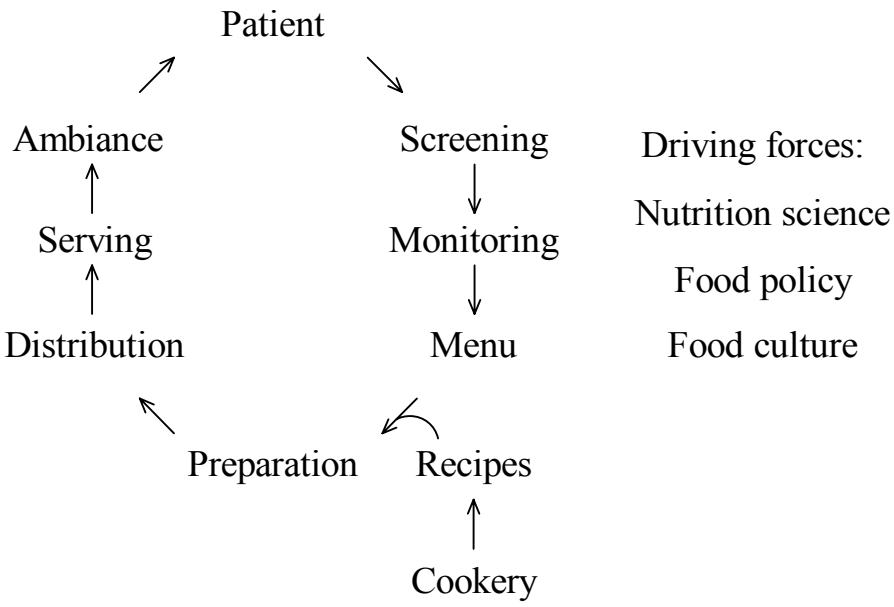
Age, years	47	± 0.5
Height, cm	172	± 0.3
Weight, kg	61	± 0.5
BMI	21	± 0.1
% reference weight	90	± 0.6
Recent weight loss, %	6.5	± 0.3
Nutritional status, grade (0-3)	1.9	± 0.03
Stress metabolism, grade (0-3)	1.7	± 0.03
Nutritional risk, score (0-6)	3.6	± 0.02
Energy goal, MJ	8.0	± 0.05
Duration, weeks	4.9	± 0.15
Regular diet		1.1
Super diet		1.9
Tube feeding		0.9
TPN		1.0
Energy intake, MJ	8.2	± 0.07

% with < 75% of maintenance requirement : 6 %

Change in 856 weighed patients, kg/week : 0.1 ± 0.03

% with >5% weight loss : 9 %

Figure 1: Cycle of food provision



Hospital environnment and food intake

Prof. Sölve ELMSTÅHL

Lund University

HOSPITAL ENVIRONNMENT AND FOOD INTAKE

by Prof. Sölve ELMSTÅHL

Introduction

Although energy needs decrease with healthy aging, the needs of specific nutrients remain approximately the same. Disease conditions like e.g. inflammation and catabolic status could result in increased needs. The prevalence of malnutrition among hospitalised elderly are common and the concept of hospital malnutrition – that the condition is caused by the care setting itself - as opposed to disease malnutrition was stated already in the 1980s.

Simplified assessment tools to detect malnutrition have been developed since then. A review of 24 Swedish studies during 1981 to 2000 comprising 3914 patients in different care settings noted a 36% prevalence of protein energy malnutrition (PEM). The range varied from 8% to 50% in medical, geriatric, surgical and long-term care wards and the clinical significance is stressed by the fact that no diminishing trend was noted the past years.

The condition of PEM often has a multi-aetiological origin including endogenous and exogenous factors. The former includes the disease itself, different nutrient needs due to metabolic changes or losses and functional incapacity, whereas exogenous factors include environmental factors, availability to food and need of assistance during the meal situation as well as cultural and social factors. This paper will address some of these latter factors from a Scandinavian perspective.

Energy needs

Energy needs and energy balance have to be considered in conjunction when discussing the influence of environment on food intake and whether it could attribute to good health or be the cause of malnutrition. A negative energy balance could be the result of insufficient intake, but also caused by increased needs due to higher metabolic demands found in some disease status. A patient could be in energy balance, but still not have an intake allowing for appropriate physical activity. A too low physical activity will result in waste of lean body mass that finally will increase susceptibility to e.g. respiratory and musculoskeletal diseases.

So, the environment should allow both for appropriate physical activity and food intake.

Man – environment interactions

Environmental psychology has given important contributions to the theoretical framework and present models of man and environmental interactions. A model put forward by Lawton during the 1970s describes the action and behaviour of the individual as the function between his/her competence and environmental press. Thus, an individual with low competence is more vulnerable to small environmental changes and demands that can result in maladaptive behaviour influencing dietary intake. This model is especially interesting in the context of nutritional care among the elderly. Elderly will experience a reduced competence with age as a result of diseases. Negative environmental press, exemplified by the physical environment (improper light, noises, low stimulation) could have greater impact than among younger patients and among staff. On the other hand, improvement of environmental factors could have greater impact on initially functionally impaired elderly with so-called low competence according to this model.

Hospital environment and behaviour

Patients with confusional reactions, irrespectively of cause, or patients with dementia have in common impaired cognitive and perceptual abilities. Previous studies have reported associations between physical environment and social participation and activities. Increasing areas for social activities and better orientation devices resulted in higher participation of social activities in a study of confused elderly patients (Liebowitz, 1979). Another study of 16 home-like dwellings for demented persons showed that those living in units with a corridor like design had significantly more restlessness than patients living in H or L-shaped units, irrespectively of type of dementia, duration of disease or other psychiatric symptoms (Elmståhl et al, 1997). Large communication area, as a proportion of the total area of the unit, was associated to less disorientation and less depressive mood, expressed as “lack of vitality”. Thus, wider corridors could facilitate orientation. Other important factors include lighting, noise, colour, orientation devices and shape. For example colour discrimination is better for red and yellow compared to blue or green (Wijk, 2001). Shape is more important for recognition after some retention time compared to colours and elementary colours (e.g. red, blue, green) are preferred instead of mixed colours to support recognition. The physical environment can, according to the ecological model by Lawton, be divided in three dimensions; the objective measurable environment, the shared consensual environment and the phenomenal environment. This study only considered the merely objective physical environment. The different adaptive behavioural strategies used during stress can be described as coping. The findings was also supported by a comparative study on demented persons in home-like dwellings and nursing homes were the former developed less deterioration of intellectual functions during an eighteen month period. (Kihlgren, 1992)

So in fact, some data support the influence of environment on behaviour.

Diseases, behaviour and food intake

Inappropriate food intake is associated with several disorders. Psychiatric disorders like confusion, depression and dementia could result in low dietary intake that might be hazardous for the patient. Physical handicaps after stroke or neurological disorders like ALS, MS or Parkinson's disease include paralysis, dysphagia and sensory deficits. These factors could influence possibilities to eat independent and dietary intake. Furthermore, several studies have reported decreased energy expenditure for chronic diseases like Parkinson's disease, Alzheimer's disease and congestive heart failure. A major contributor to this effect is most likely a reduced physical activity. Weight loss has been reported in patients suffering from Alzheimer's disease and weight loss increases morbidity and mortality and contributes to increased functional dependency. Metabolic studies of energy expenditure, using either doubly labelled water technique or heart rate technique, do not support that a hypermetabolic state contributes to this phenomenon, but rather higher physical activity and / or inadequate energy intake. (Elmståhl, 1987a; Poehlman et al, 2000, Persson et al, 2000)

Some studies have indicated that dementia goes with lower energy intake as a result of body composition changes and or changes of metabolism. Interestingly a study of non-institutionalised Alzheimer patients and healthy elderly show no differences in energy expenditure when controlling for body composition.

Chronic diseases both influence energy expenditure, mainly through changes in physical activity, and dietary intake with reduced possibilities to withhold an appropriate dietary intake.

Hospital environment and food intake

The activity areas, especially the dining room in hospitals and long-term care are often characterised by sparse and standardised decoration. The meal situation recent years has been individualised, but in many hospital in Sweden meals a still served on trays in a 3-meal system where the patient or the resident are unable to serve themselves.

A study was conducted in a geriatric long-term care ward in Malmö where the dining room was changed in a way that represented an active period of the patients' lives (Elmståhl, 1987b). In this case a milieu similar to that during the 1940s was created involving fabrics, furniture, lighting, decoration, carpets and

china. Painting was borrowed from a museum of art. And the patients were allowed to serve themselves unless they were disabled and needed help from the ward staff. The dietary intake was recorded before, during and after the environmental change. The energy intake increased with 25% to 7.2 MJ/1718 kcal when the dining room was redecorated and they could serve themselves. Also other nutrients like protein, calcium and thiamine increased in the same magnitude. The initial vitamin D intake was low, 2.8 ug and increased with 40%.

Although the dietary intake increased substantially body composition and body weight showed slight but non-significant changes. Increased physical activity seems to be the only explanation to this finding. A study of their behaviour noted increased facial expression and social interactions between patients who also spent more time in the dining room at meal times during the experimental period.

The meal situation

The meal situation comprises several components, table manners how to behave and interact as a product of social norms and culture. These shared values and norms guide the routines and practices during the meal situation. When studying meal situation in hospital or municipalities the norms and practices of ward staff have to be studied separately from the residents or patients point of view. The hospital offers a quite different meal environment and meal situation and the habits and culture was studied by Sidenvall et al (1996). The staff planned and offered meals from the perspective of nutritional needs and eating abilities whereas the patients perception of the meal was related to topics about management of food and conduct, appetite, health perspective of foods, tradition and gratitude. The actions of the staff were ritualised into three norms to provide social contact between patients through common eating, to ensure nutritional needs and to keep order. The staff's strive for normality could create feelings of inferiority among some patients. Secondly, the attempts to use the meal situation for training purposes could create a paternalistic behaviour of the caregiver.

So an increased attention on possible differences between patients' and staff's experience on the meal situation seems necessary.

Social interactions

The meal could be looked upon as a multidimensional event including social and psychological needs. The interaction between the ward staff and patients during the meal situation was studied in five demented patients at a psychogeriatric unit using a videotape (Sandman, 1988). When the patients ate alone interactions between the patients occurred, two patients became more aware of the others needs and their communication and attempt to converse

increased. The composition of meals was incomplete without the help from the staff. When the staff reappeared the patients dropped their roles as a helper.

How can we improve hospital settings?

As mentioned previously, optimal food intake during hospital stay or at homes for elderly or geriatric nursing home will depend on multiple factors. Factors related to the "meal environment" include what kinds of aims and strategies that should be implemented during the meal situation, norms and values among staff and patients, handling of the food, meal pattern, food content, feeding aids, but also physical settings including e.g. fabrics, furniture, china and serving routines. From a biological point of view, adequate dietary intake is important for well-being. Low dietary intake has been reported among elderly in different hospital settings, with different diagnosis in repeated studies. Whether elderly institutionalised patients eat little because of low physical activity and expenditure or whether a too small intake, not self-chosen, will result in low physical activity due to adaptive behaviour is an interesting area of investigation in future food and nutritional care research.

Other actions that could be taken to improve diet besides food services practices include changes of meal pattern, energy content of meals and in-between meals. We found that dietary supplements (500 kcal) given to long-term care patients could increase their total energy intake by 25% without suppression of main meals (Elmståhl et al, 1987c). Best results were noted when energy dense supplements were used (250 ml/2.1MJ, 500 kcal).

In conclusion, hospital environment including food service practices and physical settings has an impact on dietary intake and present studies support that it is possible to improve some of these factors.

REFERENCES

Elmståhl S. Energy expenditure, energy intake and body composition in geriatric long-stay patients. Compr Gerontol, 1987a, 1A, 118-125.

Elmståhl S, Blabolil V, Fex G, Kuller R, Steen B. Hospital nutrition in geriatric long-term care medicine I. Effects of a changed meal environment. Compr Gerontol, 1987b, 1A, 29-33.

Elmståhl S, Steen B. Hospital nutrition in geriatric long-term medicine: II. Effects of dietary supplements. Age and Ageing, 1987c, 16, 73-80.

Kihlgren M, Bråne G, Karlsson I, Kuremyr D, Leissner P, Norberg A. Long-term influences on demented patients in different caring milieus, a collective living unit and a nursing home: a descriptive study. Dementia 1992; 3: 342-9.

Lawton MP. Competence, environmental press and the adaptation of older people. In: Windley PG, Byrts TO, Ernst FG eds. Theory development in environment and aging. Washington DC. Gerontological Society. 1975.

Liebowitz B, Lawron MP, Waldman A. Evaluation, designing for confused elderly people. AIA J 1979; 2: 59-61.

Persson, M, Elmståhl S, Westerterp KR. Validation of a dietary record routine in geriatric patients using doubly labelled water. Eur J Clin Nutr, 2000; 54: 789-796.

Poehlman ET, Dvorak RV. Energy expenditure, energy intake and weight loss in Alzheimer´s disease. Am J Clin Nutr, 2000: 71: 650-655(S).

Sandman PO, Norberg A, Adolfsson R.Verbal communication and behaviour during meals in five institutionalized patients with Alzheimer-type dementia. J Adv Nurs. 1988 Sep;13(5):571-8.

Sidenvall B, Fjellström C, Ek AC. Cultural perspectives of meals expressed by patients in geriatric care. Int J Nurs Stud. 1996 Apr;33(2):212-22.

Sidenvall B, Fjellström C, Ek AC. Ritualized practices among caregivers at meals in geriatric care. Scand J Caring Sci. 1996;10(1):53-61.

Wijk H. Colour perception in old age. Colour discrimination, colour naming, colour preferences and colour/shape recognition. Dissertation, Göteborg University, 2001.

Organising and managing nutritional care in hospitals

Prof. Peter SCHAUDER

Georg August University, Göttingen

ORGANISING AND MANAGING NUTRITIONAL CARE IN HOSPITALS

by Prof. Peter SCHAUDER

Although disease-related undernutrition appears to be common in European hospitals, activities to prevent or treat that condition are rather insignificant (1). This is surprising, as undernutrition, in combination with disease, is an insidious factor, which prolongs recovery, increases the need for high-dependency nursing care and sometimes intensive care, increases the risk of serious complications of illness and, at its worst, leads to death either from a preventable complication or from inanition (2). To all this is added the reduced quality of life of the patients (3, 4).

In 1999 the Council of Europe established an ad hoc group on Nutrition Programmes in Hospitals. The group was given the responsibility to analyse the problem and to make proposals as to how it should be addressed.

To properly organise and manage nutritional care for patients prone to develop or suffering from disease-related undernutrition, hospitals need to possess an appropriate infrastructure.

High on the list of prerequisites is certainly the availability of

- physicians specialised in Clinical Nutrition
- a set procedure for the diagnosis and therapy of disease-related undernutrition
- nutrition steering committees
- nutritional support teams/units.

These aspects are addressed in the following provisional report. It contains some of the information obtained from a survey perfomed on the basis of the “Revised questionnaire for national contributions to the report on nutrition programmes in hospitals” from the ad hoc group (1). The data are from 662 hospitals in 12 out of 16 states of the Federal Republic of Germany. In addition, data from 26 of the 37 medical faculties of the country are presented.

Attitude of hospital physicians to the initiative

The goal of the initiative of the Council of Europe is to improve disease-related undernutrition in hospitals. In order to succeed, this endeavour needs support from within the hospitals. To obtain some information in this regard, we asked the medical directors if they considered the initiative necessary or not.

Table 1 : Assessment of the European initiative by hospital physicians

	Hospitals[a]	
Initiative is necessary	N	%
yes	437	69
no	197	31

[a] data from 634 of 662 hospitals

As shown in table 1, the initiative was considered necessary in two out of three hospitals.

Physicians educated in Clinical Nutrition

In order to prevent disease-related undernutrition, hospitals need to have physicians, who are specialised accordingly. At present, the most comprehensive postgraduate training programme in clinical nutrition is a 100-hour course implemented by the Federal Association of Physicians (5). As shown in table 2, about one out of ten hospitals employed a physician who was trained accordingly.

Table 2 : Hospitals with physicians trained in clinical nutrition

	Hospitals[a]	
Specialised physicians	N	%
available	86	13
not available	557	87

[a] data from 643 out of 662 hospitals

As to the universities, only few are presently offering postgraduate programmes in clinical nutrition. However, there are plans in several medical faculties to implement such programmes (table 3).

Table 3 : Postgraduate programmes in Clinical Nutrition in universities

	Universities[a]	
Programme in Clinical Nutrition	N	%
available	7	27
not available	19	73
planned	7	27
not planned	12	46

[a] data from 26 of the 37 medical faculties; 26 = 100 %

Set procedure for the diagnosis

Prevention of disease-related undernutrition includes nutritional assessment of each hospitalised patient according to a set standard, both on admission and during its stay in hospital. It was, therefore, asked if such a standard was available.

Table 4 : Set procedure for the diagnosis of undernutrition in hospitals

	Hospitals[a]	
Set procedure	N	%
available	189	29
not available	463	71

[a] data from 652 out of 662 hospitals

As shown in table 4, about 30 % of the hospitals indicated to have a set procedure for the diagnosis of undernutrition.

Nutrition steering committees – Nutritional support teams

In order to organise and manage nutritional care, it has been suggested to create specific structures, e.g. nutrition steering committees and clinical nutritional support teams (6). In these bodies, members from different staff groups are cooperating who are engaged in various aspects of nutritional care.

As shown in table 5, about 45 % of the hospitals stated to have a nutrition steering committee.

Table 5 : Hospitals with a nutrition steering committee

	Hospitals[a]	
Committee available	N	%
available	290	45
not available	351	55

[a] data from 641 out of 662 hospitals

The percentage of hospitals with a nutritional support team is shown in table 6.

Table 6 : Hospitals with a nutritional support team

	Hospitals[a]	
Nutritional support team	N	%
available	297	47
not available	338	53

[a] data from 635 out of 662 hospitals

As with the steering committees, almost every second hospital stated to have a nutritional support team.

Comments on the answers

To start with a positive result of the survey, the initiative of the Council of Europe is endorsed in two out of three hospitals (table 1). It remains to be seen, however, if this is including the willingness to implement the European guidelines, formulated on the basis of the other results from the questionnaire (1).

All other facts shown in the tables are rather disturbing. Only 13 % of the hospitals employed a physician qualified according to a structured programme in clinical nutrition (table 2). Presently, hospitals can argue that employment is a problem, because the number of qualified physicians is still small. It is therefore mandatory for the implementation of the European guidelines to foster education in clinical nutrition. As shown in table 3, this is true in particular for the universities.

The percentage of hospitals with a set procedure for the diagnosis of malnutrition, with nutrition steering committees, and with nutritional support teams is about 29 %, 45 % and 47 % respectively (tables 4 – 6). These numbers look better than the reality. In the great majority of hospitals, the diagnostic parameters and the composition of nutrition steering committees as well as nutritional support teams were inappropriate. This will be discussed in the final report of this survey (5). As an example, many nutritional support teams had neither a physician nor a nurse. This has been identified as a constraint to effectiveness (6).

Conclusions and suggestions

1. Many hospitals do not possess the infrastructure necessary to organise and manage nutritional care for patients prone to develop or suffering from disease related undernutrition.

2. The single most important step to overcome this medical and ethical problem is to foster education in clinical nutrition.

As indicated by the ad hoc group, the national authorities must work together to solve these and other shortcomings which will be listed in the final report (1). The respective strategies might be different from country to country. In the Federal Republic of Germany, the Federal Association of Physicians and the universities should join efforts to foster clinical nutrition.

References

1. Beck AM, Balknäs UN, Fürst P, Hasunen K, Jones L, Keller U, Melchior J-C, Mikkelsen BE, Schauder P, Sivonen L, Zinek O, ∅ein H, Ovesen L. Food and nutritional care in hospitals: how to prevent undernutrition - report and guidelines from the Council of Europe. Clin Nutr 2001; 20(5):455-460

2. Silk, D.B.A. Organisation of nutrition support in hospitals. British Association for Parenteral and Enteral Nutrition. Kent: ADM & C Ltd., Biddende, 1994

3. Larsson J, Äkerling I, Permerth J, Hörnquist J-O. The relation between nutritional state and quality of life in surgical patients. Eur J Surg 1994; 160:329-334

4. Ovesen L, Hannibal J, Mortensen EL. The interrelationship of weight loss, dietary intake and quality of life in ambulatory patients with cancer of the lung, breast and ovary. Nutr Cancer 1993; 19:159-167

5. Schauder P, Auerswald U, Beleites E, Brandstädter W, Crusius A, Eckel H, Everz D, Flenker I, Friebel H, Gadomski F, Jonitz G, Hoppe J-D, Schulze J, Weisner E, Wolter U. Mangelernährung im Krankenhaus in Deutschland in press.

6. Howard P. Organizational aspects of starting and running an effective nutritional support service. Clin Nutr 2001; 20:367-374

Guidelines for the diagnosis of malnutrition

	Hospitals[a]	
Answer	N	%
yes	117	22
no	415	78
	532	100

List of tables

Hospitals with a nutritional support team

	Hospitals[a]	
Nutritional support team	N	%
available	286	46.9
not available	324	73.5
	610	100

[a] data from 610 out of 639 hospitals

Percentage of nutritional support teams with a composition Identified as a constraint to effectiveness

	Hospitals[a]	
Lack of physicians and nurses in the team	N	%
yes	214	87
no	32	13

[a] data from 2465 out of 286 hospitals with a nutritional support team.

Hospitals with a physician trained in clinical nutrition

	Hospitals[a]	
Specialised	N	%
available	82	13.2
not available	538	86.8

[a] data from 620 out of 639 hospitals

Postgraduate training in Clinical Nutrition in universities

	Universities*	
Answer	N	%
yes **	3	14
no	18	86
	21	100

* out of 37 faculties that have answered thus far

** 4 hours per year; in pediatrics; for residents working on a medical thesis related to clinical nutrition

The role of the patient in ensuring adequate nutritional care in hospitals

Mrs Hanka MEUTGEERT

International Alliance of Patients' Organisations

THE ROLE OF THE PATIENT IN ENSURING ADEQUATE NUTRITIONAL CARE IN HOSPITALS

by Ms Hanka MEUTGEERT

It is evident: more attention for the role of nutritional care in improving health of patients in hospitals is needed. The facts and figures are very clear on that.

In my contribution about the role of the patient in this respect I would like to focus on a few aspects:

First of all, when I think of the hospitals of the future, I would like to think that we are growing towards a situation in the western world in which the patient is the director of the care that is provided to him or her. Even in a hospital. If a patient is admitted, and it is not absolutely necessary that he or she keeps to bed, the patient should be able to go about business as normal as possible. This includes a different approach towards the time planning of the doctor or nursing staff. Instead of appearing on the bedside of the patient when it suits them, the patients' own daily schedule should be the first priority. In this scheme it would be logical to plan eating facilities with good service, where the patient can take out food and drinks by choice. All the details about what and when patients eats could be easily obtained and controlled by an electronic card on which also all the relevant medical information is stored. This card can have a role in guarding the diet as well as the patient status for the time of the admission. If a patient is bound to bed or is too sick to go about he/she could still decide when and what would be for breakfast, lunch and supper. Via telephone the patient can order food as room service. The electronic device would give the indication for that. On releasing from the hospital, which will be as soon as it is medically safe to do so, there will be facilities outside the hospital, which are able and ready to care for the patient in the period of recovery. This will of course include the preparation of meals, if necessary. The patient will be seen as a consumer with whom professional care-givers are obliged to communicate. Not by repeating a commercial pay off, but by truly asking them for their opinions and take their views into account as much as possible.

This is all in the future though.

For the present I would emphasize the importance of the patient being a full partner of professionals, whether they are doctors, nurses or dieticians, in all the aspects of the disease or condition that he or she is treated for. This includes nutritional issues. If the patient has a poor feeding condition and the danger of complications arises, it should be discussed and the patient should be able to have a choice in different solutions. Whether the best solution for the particular patient is artificial feeding or more oral intake of for instance energy

dense food, is entirely up to the outcome of the communication between professional and patient.

Why not let normal patients choose by which means they want to help to try to improve their nutritional circumstances? Why not let them help to work out a menu-choice of things they would like to eat and then count how close the nutritional standards are approaches. If there is a gap between requirement and the appetite of the patients, suggestions can be made for completion of the diet.

If there is a chronic disease involved, the patient's needs are even more important. Most of the time, the patient is very experienced with all aspects of the disease, because he or she deals with it all the time. The patient's needs and views should be very much a part of the solution here. It is probable, though there is not much scientific data yet, that most profits in terms of improving health can be reach by concentration on relative "young" chronically ill patients. Due to their specific condition they are more sensitive to complications in general. Improving their nutritional status will have an effect for a relatively long time and will probably ensure the quality of life for a long time. If it is necessary enteral or parenteral means of keeping their condition sound are very much justified. Again agreement between professional and patient about the choices at hand is the best way to ensure adequate measures.

For older people it is even more important that there is communication about their wishes. It could well be that people themselves feel like they have reached the end of the line. It would be very awkward if technical interventions force them to be well-nourished, but not able to live on anyway.

In a hospital setting more common-sense approaches could be used. There is indeed no way that someone who is already malnourished because of the illness before admittance and has to undergo a treatment, can be turned into a well-nourished patient in the hospital. If the procedure works right, the malnourishment is noticed before admittance and patient, doctor and eventually dietitian can collaborate on whether to first improve the nutritional condition of whether to take the risk and be extra alert on complications. Though hospital foods can be improved, a person who is not eating much normally can't be turned into a kilo joule consuming machine at request.

When one thinks about quality of care, first and most important is, in my opinion, providing continuity of care. Taking care that the patients stay hospitalized a for as short a time as possible and that they can go to their own environment to recover, with proper care from G.P. or district nurses. This of course includes care for nourishment. The second criterion is communication about this subject, and all others, between patients and doctors. It is wise and practical and in some countries already practice that a client advisory board can give advise to the hospital board about all matter concerning patient care. To name a few: regime on the wards, protocols for admittance and release, multi-

disciplined approach etc. This collaboration can help to bridge the gap between technical measures concerning quality of care and the patients common-sense.

In general for patients it would not only be important if the food has the right amount of proteins, vitamins and nutritional quality, but it will be equally important if the food is tasty, prepared with care, served with a smile and eaten in a friendly atmosphere. Patients are like everyone else in that respect. They eat better when it tastes good. One of the solutions can well be serving more tasty items instead of only wholesome stuff that has the right amount of everything. Everybody who has raised children also knows that saying that things are “good for you” has the tendency to bring compliance to finish the plate. Before you know it, food will be subject of a domestic power struggle. If this happens in hospitals we will be further away from reaching the best nutrition conditions for the patient than ever.

Practical exercise in translating specific nutritional needs into hospital meals

Prof. Ulrich KELLER

Basel University Hospital

PRACTICAL EXERCISE IN TRANSLATING SPECIFIC NUTRITIONAL NEEDS INTO HOSPITAL MEALS

Example: Introduction of a germ-reduced diet to immunocompromised patients

by Prof. Ulrich KELLER

Introduction

Recent advances in organ transplantation and in the treatment of neoplastic diseases lead to a growing number of immunocompromised patients in our hospitals. In addition, hospitals demonstrate an increasing number of nosocomial infections. Thus, each hospital caring for such patients has to meet the challenge to provide adequate nutritional support for immunocompromised patients.with minimal infectious risk. This is even more important since these patients are prone to malnutrition and to treatment-related nutritional complications. Not only infectious complications but a series of other treatment-related reasons lead to an increased risk of malnutrition. It is surprising that the subject of malnutrition and of germ-reduced diets for these patients has rarely been studied previously (this is typical for nutritional issues). Clinical research on nutritional problems often have lower priority than topics directly related to the underlying disease.

Reasons for nutritional problems in haematopoietic stem cell transplant (HSCT) recipients

- Infections- including those related to microbial contamination of food;
- Increased rate of catabolism (1);
- Mucositis – leading to impaired ability of oral nutrition; dysgeusia; increased losses of secretions;
- Diarrhea – due to chemotherpy, irradiaton or graft versus host disease; high frequency of secondary lactose and/or gluten intolerance.
- Loss of appetite due to ablative therapy; due to complications; due to drugs;
- Metabolic disorders following organ complications, such as renal or hepatic failure, glucose intolerance, dyslipidaemia;
- Psychological difficulties related to an isolated controlled environment and the impact of this on nutrition.

Many of these problems are related to drugs necessary to avoid rejection of transplanted organs by the host.

Table 1: Immunosuppressive drugs used in transplantation and their nutrition-related side effects

Drug (Mechanism)	Nutrition-related side effects-acute	Nutrition-related side effects-chronic
Prednisone (Anti-inflammatory, immunosuppressive, enhances other immunosuppressives)	Fluid/sodium retention Increased appetite Hyperglycaemia	Weight gain Calcium/phosphorus wasting Osteoporosis GI ulceration
Azathioprlne (Imuran) (Anti-inflammatory, immunosuppressive, depresses delayed hypersensitivity reactions)	Nausea/vomiting Diarrhea Macrocytic anaemia Mucositis	Oesophagitis Pancreatitis Increased risk of infection
OKT3 (Inhibits T-cell effector function)	Fever/chills Nausea/vomiting Diarrhea Hypertension Fluid retention	Increased risk of infection
Cyclosporine (Decreases IL-2 production, spares T suppressor cells)	Nephrotoxicity Hyperkalaemia Hypomagnesaemia Hyperuricaemia	Hypertension Hyperglycaemia Hyperlipidaemia
Tacrolimus (FK5O6/Prograf) (Decreases IL.2 production, spares T suppressor cells—more potent than cyclosporin)	Nausea Vomiting with i.v. administration Abdominal pain Nephrotoxicity Hyperkalaemia	Hyperglycaemia
Methotrexate (MTX) (Antimetabolite, interferes with DNA synthesis, repair and cellular replication)	Anorexia Nausea Stomatitis Diarrhea Fever/chills	

Our hospital has recently set up an interdisciplinary team to organise the availability of adequate germ-reduced nutrition for immunocompromised patients.

The need for such a task has been emphasized in a recent recommendation published by the Center for Diseases Control in the US (2).

An interdisciplinary team has been constituted with the following groups of hospital staff:

- Transplantation specialists (physicians, nurses)
- Infectious disease specialists (hospital hygiene group)
- Kitchen (cooks, management), Diet kitchen
- Dietitians
- Nutriton specialist (internist, specialty: Metabolism; head of group)

Steps of action to put a germ-reduced diet for immunocompromised patients into practice (example)

A. Definition of the group of patients considered as "immunocompromised" and being in need of a specific diet:

1. Hemopoietic stem cell transplantation (HSCT)
2. Aplastic anaemia after treatment with antithymocyte globulin
3. Ablative chemotherapy, duration of aplasia > 5 days
4. Heart transplantation

The Basel University Hospital does not perform other major organ transplantations (lung, liver, pancreas).
Not immunocompromised were considered: Patients with AIDS, during high dose glucocorticoid therapy, after kidney transplantation. Also not considered in this project were patients before transplantation or patients in the chronic ambulatory phase after transplantation.

B. Consensus on the major features of a germ-reduced diet

A consensus was sought among the team to define a germ-reduced diet for these patients. Diets for immunocompromised patients can be devided into three types according to the degree of sterility:

1. Sterile food regimens
2. Very Clean Food Regimen; Clean Food ("Low microbe") Regimen;
3. Post-hospitalisation Clean Food Regimen

The publication by the CDC was instrumental in the fulfilment of this task (2).
The diet used in our hospital belonged to the category "Clean Food Regimen"; this diet is not sterile- but it eliminates the most important sources of pathogenic microorganisms.

Sterile regimens have been used in the past after introduction of bone marrow transplantation. However, they have been abandoned and replaced by Clean Food Regimens because they have not been shown to improve the recovery of transplanted patients, sterile food is also a severe impairment of quality of life. Very clean food implies that fesh bread is not allowed, and meals have to be served immediately after cooking.

Water and other beverage safety

Cryptosporidium disease is a risk for haematopoietic stem cell transplant (HSCT) recipients and other immunocompromised patients; it was therefore prudent to avoid possible exposures to Cryptosporidium in these patients because it has been reported to cause severe, chronic diarrhea, malnutrition and death among other immunocompromised persons. Patients can prevent infection (cryptosporidiosis) by avoiding drinking or eating uncooked food prepared with tap water. These extra precautions include avoiding fruit drinks made from frozen concentrate mixed with tap water, and iced tea or coffee made with tap water.

Juices labeled as pasteurized are safe. Immunocompromised patients should not drink unpasteurized milk or fruit or vegetable juices (e.g., apple cider or orange juice) to avoid infection with Brucella species, E. Coli (O157:H7), Salmonella species, Cryptosporidium, and others.

Table 2: Foods that pose a high risk for immunocompromised patients and safer substitutions

Foods That Pose a High Risk	Safer Substitutions
Raw and undercooked eggs* and foods containing them (e.g., french toast, omelettes, salad dressings, egg nog, and puddings)	Pasteurized or hard boiled eggs
Unpasteurized dairy products (e.g., milk, cheese, cheese containing moulds; cream, butter, and yogurt)	Pasteurized dairy products
Fresh-squeezed, unpasteurized fruit and vegetable juices	Pasteurized juices
Undercooked or raw poultry, meats, fish, and seafood,	Cooked poultry, well-done meats, cooked fish, and seafood
Vegetable sprouts (e.g., alfalfa, bean, and other seed sprouts)†	Should be avoided
Raw fruits with a rough texture (e.g., raspberries)§	Should be avoided
Smooth raw fruits; unwashed raw vegetables	Should be washed under running water, peeled, or cooked
Undercooked or raw tofu	Cooked tofu (i.e., cut into <1-inch cubes and boiled for >5 minutes in water or broth before eating or using in recipes)
Raw or unpasteurized honey	Should be avoided
Raw, uncooked grain products	Cooked grain products including bread, cooked, and ready-to-eat cold cereal, pretzels, popcorn, potato chips, corn chips, tortilla chips, cooked pasta, and rice
Unpasteurized beer (e.g., home-brewed)	Pasteurized beer (i.e., retail microbrewery beer) bottled or canned, or draught beer that has been pasteurized after fermentation)
Raw, uncooked brewers yeast	Should be avoided; HSCT recipients should avoid any contact with raw yeast (e.g., they should not make bread products themselves)
Unroasted raw nuts; roasted nuts in the shell;	Cooked nuts; canned or bottled roasted nuts or nuts in baked products

* : CDC. Outbreaks of Salmonella serotype enteritidis infection associated with consumption of raw shell eggs—United States, 1994–1995. MMWR 1996; 45(34):737–42.
† : Taormina PJ, Beuchat LR, Slutsker L. Infections associated with eating seed sprouts: an international concern. Emerg Infect Dis 1999;5(5):626–34.
§ : Herwaldt BL, Ackers ML. Outbreak in 1996 of cyclosporiasis associated with imported raspberries. New Engl J Med 1997;336(22):1548–56.
Foodborne outbreak of cryptosporidiosis—Spokane, Washington, 1997. MMWR 1998;47(27):565–7.
** : CDC. Update: multistate outbreak of listeriosis—United States, 1998–1999. MMWR 1999;47(51):1117–8.

Food safety practices

Raw poultry, meats, fish, and seafood should be handled on separate surfaces (e.g., cutting board or counter top) from other food items. Microwave ovens and cook-chill systems are not allowed with all germ-reduced diets.

Food preparers should always use separate cutting boards (i.e., one for poultry and other meats and one for vegetables and remaining cutting or carving tasks), or the board(s) should be washed with warm water and soap between cutting different food items. To prevent foodborne illnesses caused by Campylobacter jejuni and Salmonella enteritidis, which can cause severe and invasive infections among immunocompromised persons, uncooked meats should not come in contact with other foods. After preparing raw poultry, meats, fish, and seafood and before preparing other foods, food handlers should wash their hands thoroughly in warm, soapy water. Any cutting boards, counters, knives, and other utensils used should be washed thoroughly in warm, soapy water also. Food preparers should keep shelves, counter tops, refrigerators, freezers, utensils, sponges, towels, and other kitchen items clean.

All fresh products should be washed thoroughly under running water before serving. Persons cooking food for immunocompromised persons should follow established guidelines for monitoring internal cooking temperatures for meats. The only method for determining whether the meat has been adequately cooked is to measure its internal temperature with a thermometer because the colour of the meat after cooking does not reliably reflect the internal temperature. Different kinds of meat should be cooked to varying internal temperatures. Specifically, it is recommended that poultry be cooked to an internal temperature of 82°C; other meats and egg-containing casseroles and souffles should be cooked to an internal temperature of >71°C. Cold foods should be stored at <4°C; hot foods should be kept at >60°C.

The following written instructions were given to food preparers:

- Wash your hands before and after handling leftovers,
- Use clean utensils and food-preparation surfaces,
- Divide leftovers into small units and store in shallow containers for quick cooling,
- Refrigerate leftovers within 2 hours of cooking,
- Discard leftovers that were kept at room temperature for >2 hours,
- Reheat leftovers or heat partially cooked foods to >74°C throughout before serving,
- Bring leftover soups, sauces, and gravies to a rolling boil before serving.

Additional food safety practices appropriate for haematopoietic stem cell transplant recipients

The germ-reduced diets should be continued for 3 months after haematopoietic stem cell transplant for autologous recipients. Allogeneic recipients should remain on the diet until all immunosuppressive drugs (e.g., cyclosporine, steroids, and tacrolimus) are discontinued. However, the physician should have the final responsibility for determining when the diet can be discontinued safely.

C. Definition of the logistics to provide germ-reduced diets to wards

This was performed acknowledging the commercial source of the food, storing of food in the kitchen area, transporting it to the ward, and storing the food in the wards.

E.g. it turned out that milk was supplied to our hospital kitchen directly from a farmer; it had to be assured that no raw milk was used for preparing meals.

Regarding transport systems to the ward, the food was standing in a warm environment several hours on its way to the wards. It had to be assured that no delays in transport between kitchen and ward occurred.

D. Introduction of a special diet order plan

This plan had to consider on one hand, the needs and the preferences of the patient, on the other hand it had to recognize the feasibility of providing the selected food items from the kitchen to the ward.

Due to the restriction imposed by the requirement of germ-reduced food it had to be assured that there was a variety of foods available which on one hand, was sufficient for the taste preferences of the patients and their nutritional needs, on the other hand fulfilled the microbiological requirements.

E. Creation of a brochure and information leaflets for patients.

The leaflet explained that nutrition during the period of aplasia has the following features and limitations:

- The choice of foods is reduced;
- The food recognises the fact that the oral mucosa may be sore;
- Treatment (e.g. chemotherapy) alters the taste and the sense of the food;
- Foods should be rapidly consumed, and leftovers should not be kept in the room but returned to the kitchen;
- The use of commercial nutritional supplements (enriched drinks), and food which is industrially processed was encouraged.
- The patients are encouraged to call dietitians to assist them in making their food choices;
- It is emphasized that appropriate oral hygiene is important to diminish germ contamination, e.g. with regular mouth washes and regular dental brushing;
- It is explained how the components of the germ-reduced diet are ordered in the kitchen; how food is made available during times when the kitchen is closed.
- The leaflet explains that the period of diminished food choices is temporary, and that it helps to overcome the disease.

F. Creation of a brochure and information of ward staff

A leaflet informs the nurses and other staff of the wards about the features of the germ-reduced diet and the specific nutritional problems of the patients.

G. Dietary counselling of immunocompromised patients

Patients often have individual nutritional problems related to complications of the treatment (e.g. hyperglycaemia and dyslipidaemia; weight loss or gain; dysgeusia, mucositis, diarrhea). Specifically trained dietitians should be available for the care of these patients.

H. Monitoring of microbiological safety of the germ-reduced diet

The Infectious Disease Service is asked to check regularly the food for microbiological safety and the practice how food is delivered to the patients.

The experience with the introduction of this diet in our hospital demonstrates that malnutrition in immunocompromised patients can only be prevented in a multidisciplinary team approach, where staff from various groups of health professionals act together.
It shows that food and nutrition in a hospital has to consider catering, economic, organisational *and* medical points of views.

REFERENCES:

1. Keller U, Kraenzlin ME, Gratwohl A et al. Protein metabolism assessed by 1-13C leucine infusions in patients undergoing bone marrow transplantation. JPEN.J.Parenter.Enteral.Nutr. 1990;14:480-4.

2. Guidelines for Preventing Opportunistic Infections Among Haematopoietic Stem Cell Transplant Recipients; Recommendations of CDC, the Infectious Disease Society of America, and the American Society of Blood and Marrow Transplantation. Centers for Disease Control; Morbidity and Mortality Weekly Report, 49: RR-10, 1- 147, 2000.

Improving nutritional care in Swedish health care

Dr Torsten MOSSBERG

Director
National Board of Health and Welfare
Sweden

IMPROVING NUTRITIONAL CARE IN SWEDISH HEALTH CARE

by Dr Torsten MOSSBERG

"Good nutrition is essential for avoiding illness and regaining health. All persons, including the healthy, the sick and the aged, are entitled to adequate nutrition suited to their individual needs and medical conditions."

There have been several reports concerning bad quality in nutritional management in Sweden resulting in high prevalence and incidence of malnutrition in the Swedish Health service especially in the care of elderly. In 25 studies covering a total of 5120 patients, the average rate of PEM was 28 percent. The frequency among chronically ill elderly persons in care can be substantially higher. 1997 one study reported that 70% of elderly in nursing homes or special housing accommodations in the Stockholm area were suffering from malnutrition.

In 1996, the National Board of Health and Welfare published directions concerning quality improvement systems.

To guarantee quality in nutritional support in hospital care and nursing homes it is essential to follow these instructions.

All health and medical services shall maintain systems for planning, implementing, evaluating and improving the quality of services. All staff shall participate in the continuous systematic improvement of quality of services.

The Quality improvement system shall:

- ensure the dignity, integrity, participation and safety of the patient,
- include measurable targets and be documented in a quality plan,
- include procedures for applying appropriate methods for diagnostics and care,
- include procedures to ensure that there are continuous developments of professional skills,
- include procedures for identifying, analysing and evaluating risks
- Include procedures for self-assessment, evaluation, feedback, documentation and tractability.

The care provider is responsible and shall provide instructions and make sure that there is an effective quality improvement system in every unit with the organisation, resources and methods that will ensure the quality of the care and medical services.

Official guidelines are a way to help the care provider to provide instructions in the field. Official guidelines in clinical nutrition don't exist in Sweden. Following discussions with the Swedish Medical Society, the National Board of Health and Welfare decided in 1998 to establish a temporary committee of experts to analyze all aspects of the problem.

The committee's task was to review the scientific literature in order to identify key problem areas, and then to submit advice on the proper evaluation and treatment of malnutrition (guidelines).

The report is intended to satisfy the need for a readily accessible scientific review of the various issues that must be considered in order to achieve a satisfactory outcome for the patient. The report consists of two parts, the first of which is primarily concerned with the practical aspects of nutrition. Part II is directed to those with special interests in the subject; it includes an evaluation of the available literature on the treatment of malnutrition in connection with various medical conditions.

The report " Näringsproblem i vård och omsorg, prevention och behandling" ("Problems of nutrition in Health care and human services") was presented at the annual meeting of the Swedish Medical Society in December 2000. An English translation of the report is available at. www. sos.se.

Expert committee

Gunnar Akner MD, Ingvar Bosaeus MD, Professor; Tommy Cederholm MD, ass Professor; Ingemar Eckerlund Ph D; Sölve Elmståhl MD, Professor; Ingegerd Johansson, OD, ass. Professor; Elisabeth Rotenberg RN, Dr Med Sci; Lars Steen MD, ass. Professor; Kristina Stig Ph D; PO Sandman RN, Professor; Mitra Unosson, RN, Dr Med Sci; and Torsten Mossberg MD, Director and editor.

Contents

The report is a review over actual knowledge and contains easily accessible chapters dealing with incidence, prevalence, assessment, prevention, ethics, costs and practical guidelines. An important part of the report presents an evaluation of current literature primarily from the point of view of the effects of nutritional support/treatment on functional capacity, morbidity and mortality in the case of protein-energy malnutrition (PEM) in conjunction with various states of illness.

In the following I will summarise the most important message in the report.

- Malnutrition is defined as a condition of imbalance between the intake and utilisation of nutrients, leading to an increased risk of illness. The most common type of malnutrition in Swedish health care is caused by a combined lack of energy and protein, a condition known as protein-energy malnutrition (PEM).

- Nutritional deficiencies usually arise as the result of interacting medical, psychological and socio-economic factors. Most cases involve both

inadequate ingestion of food and increased utilisation, resulting in breakdown of the body‘s reserves.

- Nutritional status should be evaluated with a combination of BMI (body-mass index) weight loss and eating problems. A weight loss during the past six months of more than ten percent for middle-aged persons, or more than five percent for those over 65, may indicate malnutrition. Subjective Global Assessment (SGA) and Mini Nutritional Assessment (MNA) can be used to evaluate nutritional status of both hospitalized and out-patients, and for elderly persons living in their own or in nursing homes.

- In order to reduce the incidence of malnutrition, it is first of all necessary to apply preventive measures. “Primary prevention“ involves preventing the occurrence of malnutrition in any form. With “secondary prevention“, malnutrition is detected by clinical screening at an early stage, followed by treatment designed to shorten the length of an illness or prevent a relapse.
  The function of “tertiary prevention“ is to alleviate the affects of malnutrition. The current steady increase in the ranks of the elderly (target-group perspective) means that preventive measures cannot be restricted to the individual level (illness perspective), but must also include the personnel who look after the patient in question (arena perspective).

- Many diseases both chronic and acute are associated with catabolic processes that per se may lead to protein-energy malnutrition. In addition the patient often suffers from anorexia that leads to a reduced nutrient intake. The breakdown of body tissues and the anorexia are partly the result of biochemical mechanisms that are activated by the disease. There is a vast documentation of a strong relationship between PEM and increased morbidity, mortality and prolonged length of stay in the hospital, especially in chronic diseases. There is much less evidence that nutritional support can correct malnutrition that occurs during disease and lead to better outcome for the patient.

- The report presents an evaluation of current literature, primarily that relating to the effects of nutritional treatment on morbidity and mortality in cases of malnutrition connected with various illnesses. The knowledge base is inadequate in many respects, due among other things to difficulties in conducting reliable clinical studies. The most extensive available data for evaluating the effects of nutritional treatment are those relating to emergency medicine (perioperative and intensive care), intestinal disorders and cancer. There is also good knowledge in chronic obstructive pulmonary disease, hip fractures in elderly and in elderly patients with multiple disorders.

Uncertainty in the results of completed studies should not be interpreted as a reason for not supplying the patient with added nutrition.

- Since the scientific basis for the treatment of malnutrition in connection with various illnesses is at present incomplete, it is very important to encourage research related to the clinical treatment of nutritional problems, in order to improve methods of treatment (including preventive measures) for specific conditions or combinations of illnesses.

- Nutrition is an important aspect of medical treatment, but also of patient care. Active measures in both areas have great significance for preventing the development of

malnutrition and the treatment of undernourished patients. Based on an evaluation of the patient‘s nutritional deficiencies and requirements, it is possible to plan a programme of care in consultation with the patient and relatives, doctors, nurses and dieticians. Satisfactory care requires systematic documentation of the patient‘s problems, any measures taken and their effects and the transfer of information between various care providers.

- It is vital that all nutritional treatment have a sound ethical basis, the fundamental principles of which are: respect for the patient‘s integrity; make things better, not worse; be fair; and preserve the sanctity of life. The following guidelines may be helpful when dealing with patients who may be incapable of expressing their own wishes. It is up to the responsible physician to decide on which measures to take. The Swedish National Board of Health and Welfare has issued general guidelines on the maintenance of body fluids and nutrition during the final stage of life.

- There is probably great potential for savings of both human suffering and economic resources through efficient prevention and treatment of undernourished patients. A cautious estimate, based on the assumption that time in care is reduced by proper nutritional treatment, suggests annual savings on the order of SEK 0.5 - 1 billion in Sweden. However, it is yet to be scientifically demonstrated that available methods of prevention and treatment can shorten periods of convalescence.

- It would be a great advantage if clinical nutrition were organised and integrated into the health-care system in a different way than at present. Any nutritional problems of the patient should be taken into account during his or her entire passage through the system, from primary care to hospitalisation nursing homes or special housing accommodation. It should be possible to offer specialist evaluations either at special clinics or at clinic-associated departments of nutrition in hospitals and other facilities. Experience suggests that it is possible to greatly improve the treatment of nutritional problems if every care-providing entity organises a group including members of all relevant occupations, a nutritional advisory team, which develops local guidelines for clinical nutrition and participates in the evaluation and acquisition of products and aids.

- It will only be possible to achieve satisfactory identification, diagnosis and treatment of malnutrition if training in matters of nutrition is improved. All occupational groups that come in contact with patients and clients should receive a more systematic education in nutritional issues. A dietician with responsibility for the ongoing nutrition training of all personnel in primary care could make a significant contribution to the development and implementation of adequate treatment. It is also important to follow up such training with the establishment of an organisational structure for clinical nutrition within Health care, so that all categories of students have an opportunity to combine theoretical knowledge with practical experience.

The report’s key message is:

The patient’s nutritional problems must be dealt with in the same way as with any other medical treatment, with the same demands for evaluation, diagnosis, treatment plans, follow-up and documentation.

All health care and human services should include routine procedures for:

- Identification and diagnosis of undernourished individuals
- Treatment of malnutrition
- Documentation and information transfer
- Follow-up and evaluation
- Co-operation between various levels of care
- Basic and continuing education.

Distribution and implementation

The report is now sent to every hospital in the country and to all the nutritional societies and institutions. A new society (SNUS) is formed with representatives from all nutritional societies in Sweden in order to introduce the report. There have been articles in nearly every medical journal in Sweden and in daily newspapers. The expert committee and the new society members are very active in education, helping the implementation by giving lectures all over the country. Meetings with representatives from the authorities are held. The report has already been sold in more than 1000 copies.

The national Board of Health and Welfare will evaluate the distribution in two years.

As the report is to be regarded as advice and guidelines it is not possible to resort to sanctions from the National Board. Still, in the supervision work of the board, we are very concerned about the quality improvement system. The guidelines in the report should be a part of the quality improvement in all institutions where patients are being cared for.

REFERENCE

Näringsproblem i vård och omsorg (Problems of nutrition in health care and human services) SOS rapport 2000:11. http://www.sos.se

Nutritional practice in hospitals in Hungary: causes of undernutrition

Dr Mária BARNA

President, Hungarian Society of Nutrition

NUTRITIONAL PRACTICE IN HOSPITALS IN HUNGARY: CAUSES OF UNDERNUTRITION

by Dr Mária BARNA

Prevalence of undernutrition in hospitalized patients

Disease-related undernutrition is as common in Hungary as in other countries in Europe, maybe relatively more common, because the rate of old age population is very high in Hungary; the aging index (the old age population as a percentage of the child population) is 85.5 % (6). Elderly patients are at particular risk owing to reduce appetite and response to thirst, existing medical problems, increased medications, oral and swallowing problems, depression, decreased income, and social isolation (5).

It is the same concerning alcohol addicts. The number of registered alcohol addicts are 47 243, but the estimated alcohol addicts are 686 000, more than 6% of the population (6).

The number of smokers is among the highest in Europe.

On the other hand the premature birth rate is permanently high, and the rate of newborn babies with birth-weight lower than 2500 g is 8.3% (6).

The estimated prevalence of undernutrition is 48% (slight or moderate form), the severe grade form of undernutrition is about 31%. In many cases the nutritional risk is not recognised, and significantly increases in patients during hospitalization (7, 8). That means that almost half of the hospitalized patients is suffering both protein-caloric malnutrition and/or significant vitamin deficiencies (particularly of folat, vitamins B_2, B_6 and vitamin C) at the time of admission.

Undernourished patients are at greater risk for adverse medical outcomes, including death, than well-nourished patients (2, 4).

Hospital food

Nutritional care for ill patients is a complex process, but it is considered as a part of clinical treatment only in very few hospitals in Hungary. It is hard to imagine that something as fundamental as nutrition continues to be undervalued as a key component of a patient's care.

The provision of meals is carried out either by the hospital itself or by external operator; central plating system exists in some hospitals, and decentralised plating in others.

The number of meals produced per day is generally three, for diabetic patients 6 or 7. In-between meals and snacks are not available only available in a special cases. Menu choice is only in a few places.
Two types of diet: general or normal and therapeutic diets are available in hospitals. The therapeutic diet is a modification of normal diet, i.e.:

- change in consistency of food
  (i.e. liquid diet, soft diet)
- increase or decrease in energy
  (i.e. high caloric diet)
- adjustment in the nutritional balance of nutrients
  (i.e. high-protein diet, low-fat diet)
- omission of specific foods
  (i.e. allergy diet, gluten-free diet)
- special diet
  (i.e. puric acid reduced diet, PKU-diet)

The therapeutic diet is supervised by dietitians.

Diet composition can be determined by computerised nutrient analysis programme in all hospitals. Chemical analysis is not performed except in some samples when supervised by the authorities.

Naturally the food served does not mean the actual intake of patients. Unfortunately, the patient's energy and nutrient intake isn't recorded in malnourished patients either. It is monitored only in special cases and in patients with artificial feeding.

In Hungary physicians order the adequate diet for patients, and dietitians are responsible for providing the individual requirement. The dietitian is the connecting person between the ward and the food service.

Food service is supplied on a tight budget

The daily cost of food for a hospitalized patient is 300 HUF, i.e. about 1.5 EURO. It is an extremely small amount of money to cover the RDAs and meet the Hungarian food-based dietary guideline, and cover the increased requirement of patients with undernutrition or special cases. Besides that this money has to cover the expenses of the formulas of enteral feeding also.
The cost of parenteral feeding is loading the therapeutic budget.
The total expenditure on health (OECD data – $/capita in 1998) is 705 in Hungary (930 in Czech Republic, 496 in Poland, 2424 in Germany, 2055 in France, 2081 in Belgium, 1968 in Austria).

Nutritional knowledge of staff members who are responsible for the nutritional care

The dietitians are the key persons in hospital nutrition. They are well-educated experts. The duration of their training is eight semesters. The Hungarian Accreditation Committee acknowledged the training of dietitians and qualified it as excellent and internationally accreditable.

The physician's education contains only a few lessons addressing nutrition-related topics. Medical students acquire knowledge about physiological and pathological metabolic processes as a part of the preclinical subjects. These lectures deal with the structure, and the effect of different nutrients, not with the healthy nutrition. Regarding the clinical subjects, dietetics may be mentioned in

connection with different clinical pictures but unfortunately it is often omitted. Nutritional education in Hungary is entrusted to the professors of internal medicine, pediatrics and surgery etc. They should deal with nutrition in some hours of their lectures. The curricula are large and dietotherapy might be left out. Consequently, medical students are rather uninformed about nutrition and dietetics.

Because of the lack of nutritional knowledge of physicians an effective team cannot be developed.

Nurses education is not focused on nutrition either.

There is a permanent deficit in the number of medical staff first of all the number of nurses, because of the very low salary. It makes it difficult to take care of patients who need help with eating.

Although dietitians are well-educated experts their work is not as effective as could be. One dietitian is responsible for about 130 (80 – 250) patients' nutritional supply. In such circumstances it is impossible to deal with the patients' special nutritional problems in detail.

Nutritional care depends on the education and the attitude of the physicians in Hungary

In most general hospitals the nutritional risk of patients is not determined, and no nutritional treatment plan is developed. Fewer than 10 Nutritional Support Teams (NST) are established in different universities and hospitals. Physicians, dietitians, pharmacists and nurses work together. They deal first of all with the artificial feeding (indication, management, and control etc.).

Nutritional risk screening is not the part of the requirement of the accreditation of hospitals. There is no adequate recognition of the problem of undernutrition.

Nutrition risk assessment

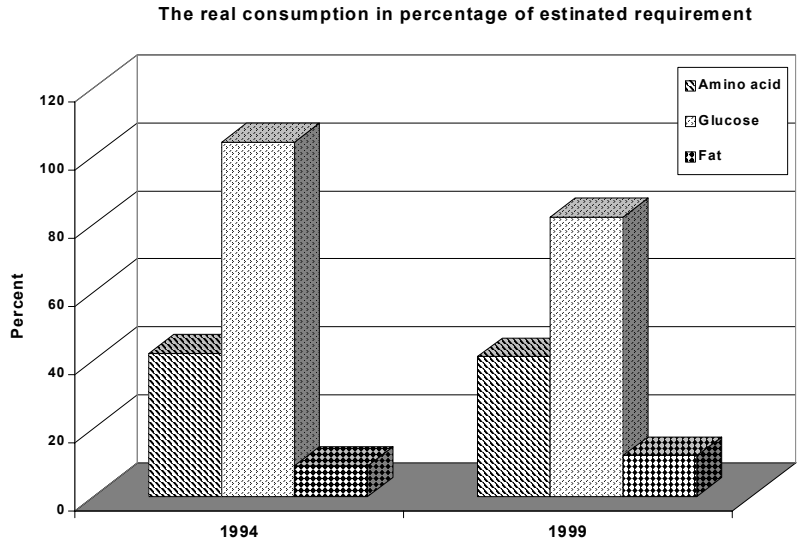
There is no formal nutritional assessment.
Dietitians' task would be to get information about the nutritional history of patients. To evaluate the physical signs and symptoms (hair, eyes, lips, skin, muscles, cardiovascular system etc.) and laboratory data (serum proteins: albumin, transferrin, prealbumin, total lymphocyte count, haemoglobin and haematocrit etc.) of nutritional status of patients are the tasks of physicians. The subjective global assessment questionnaire (SGA) is applied in few hospitals (1), in the others local questionnaires of their own are used (3). The body composition is measured first of all in obese patients. In a lot of places simple rapid tests have been developed for detecting malnutrition of ill patients.

Nutritional support

According to the Hungarian Society of Clinical Nutrition about 15 – 20% of the hospitalized patients require nutritional support (8):

2% total parenteral nutrition,
15 % total enteral or supplementary enteral feeding.

The comparison of the estimated and real consumption of solutions in Hungary showed as follows:



Requirement of patients/day:
mean 2000 kcal and 65 g amino acid, i.e.
----- 1250 ml 20 % glucose solution
----- 1000 ml 10 % fat emulsion
----- 1300 ml 5 % amino acid solution (7, 8)
The patients got only 42% of their amino acid requirement, 104% of their glucose requirement and 9% of their fat requirement in 1994 (on the basis of the consumption of solutions). In 1999 the data changed as follows: the patients got only 41% of their amino acid requirement, 82% of their glucose requirement and 12% of their fat requirement.

In the case of total enteral feeding the requirement for 5 days amounts to 7500 ml. (1 ml formula = 1 kcal, 1500 kcal/day= 1500 ml)

On the basis of the total consumption of formulas the patients got only 2.2% of their requirements in 1998. In case of supplementary enteral feeding (1500 kcal/day or 500 kcal/day) the patients got only 3.3% or 6.6% of their need respectively (7, 8).

The cause of these sad data, beside the low level of nutritional knowledge and inexpert personal attitude of physicians, may be that the warning signs and consequence of the lack or inadequate form of enteral or parenteral nutrition are not recognised easily by them. The adequate nutrition of patients is not a financial question in Hungary either, because nutrition is the most cost effective measure to prevent the complications of diseases. However, cost–benefit analyses in relation with nutrition have not been performed in hospitals.

To improve the intolerable situation it would be necessary:

- to increase awareness among the health care teams of
- the real importance of nutritional status in illness,
- to have available nutritional assessment tools,
- to teach physicians to recognize nutritional deficiency,
- to reduce the number of energetically inadequate meals delivered,
- to improve the quality of hospital food and eating conditions and environments,
- to change the perception of gradual and post gradual training of physicians; each medical student should have a basic training in nutrition either obtained during university training or during a post-graduate education programme,
- to provide nurses with appropriate training on current nutrition problems,
- to make the responsible authorities understand the need to change the financial circumstances of the nutrition of the ill patients (Ministry of Health, National Health Insurance, the administration of hospitals).

Some general initiatives to improve the situation:

- The Hungarian Society of Nutrition was established in 1967.
- The Hungarian Society of Clinical Nutrition was established as an independent society in 1990.
- They support the nutritional scientific research and regularly organise training and teaching workshops, and symposia mainly for physicians and dietitians.
- Hungarian Dietary Guidelines were elaborated in 1984.
- Hungarian Food Intolerance Data Bank was established in 2000.
- Journal of Nutrition, Allergy, and Diet, scientific, post gradual periodical is delivered regularly from 1995.
- Dietetic Department of the Semmelweis University regularly organises training for dietitians and catering managers .

REFERENCES:

1. Detsky A.S., Mcloughlin J.R., Baker J.P. et al.: What is Subjective Global Assessment on nutritional status? JPEN 1987 :11: 8 –13.

2. Hall K., Whiting S. J., and Comfort B.: Low Nutrient Intake Contributes to Clinical
Outcomes in Hospitalized Elderly Patients. Nutrition Reviews, 2000 : 58 : 214 – 217.

3. Harsányi L., Bukovácz R., Molnár Zsuzsanna, Darvas Katalin : A tápláltsági állapot
jelentősége a sebészetben (Significance of nutritional assessment and nutrition in surgery) Magyar Sebészet 1998 : 51: 357 – 360.

4. Kathleen M. L., and Escott-Stump S.: Krause's Food, Nutrition, Diet Therapy. 9th ed.
W.B. Saunders Co., Philadelphia etc., 1996.

5. Seiler W.O., and H.B. Stähelin (Eds.): Malnutrition in The Elderly. Steinkopff, Springer,
Darmstadt 1999.

6. Statistical Yearbook of Hungary 1999. Hungarian Central Statistical Office, Budapest
2000.

7. Varga P.: Personal Communication

8. Varga P.: Éheznek-e az aktív táplálkozásra képtelen betegek kórházainkban? (Are patients unable to feed themselves starving in our hospitals?) Táplálkozás, Anyagcsere, Diéta
1995 : 1 : 5 – 13.

Conclusions

Prof. Simon Allison

University of Nottingham

CONCLUSIONS

by Prof. Simon Allison

The magnitude of the problem

Malnutrition is an existing problem, also in European countries.

Overnutrition in the form of obesity is present in among e.g. 20% of the English and 6% of the French population. Obesity increases the risk of heart disease, diabetes, cancer etc.

Undernutrition in the form of underweight and weight loss is seldom in the community (3-10%), but reaches a significant level in hospitals and nursing homes (20-50%).

The consequences of the problem

Undernutrition results in a decrease in mental and physical functioning and quality of life. In combination with disease, undernutrition increases e.g. the risk of infections and bedsores, and decreases wound healing and organ function.

Besides a (further) decrease in quality of life, this results in increasing costs during the hospital stay, due to the need for longer stay, more drugs, more personnel and more treatment in general.

Detection of the problem

Step 1.

To be able to institute proper treatment of patients in nutritional risk, screening is obligatory.

Measuring of height and weight and calculation of BMI gives a good picture of the actual nutritional status.

The percentage of weight loss in the last 1-6 months reveals the progression in nutritional status in the past.

And recent food intake and severity of disease predicts the nutritional status in the future.

Based on the screening results actions should be taken.

Step 2.

Appropriate nutritional assessment should be made involving nutritional status and disease state. In addition information about e.g. vitamin and mineral deficiencies and the effect of nutritional status on mental and physical functioning should be gathered.

Step 3.

The monitoring of the patient is of utmost importance. It is necessary to make a treatment plan and set dietary goals. The monitoring and follow-up of the patient has to continue all the way through the hospital stay and out in the community.

Treatment of the problem

Undernutrition in combination with disease has many causes. To secure an effective treatment a multidisciplinary approach is necessary.

The responsibilities of the staff categories and the hospital managers with respect to procuring nutritional care and support should be clearly assigned.

There has to be focus on the food chain and the eating environment.

Nutritional Support Teams are needed to aid with the provision of artificial nutritional support in the minority of patients, who are in need of such treatment.

The co-operation between hospital managers, physicians, nurses, dieticians and food service staff should be improved and so should the co-operation between the hospital and primary health care sector, in order to secure the continuity of nutritional treatment.

Solutions to the problem

A policy regarding food and nutritional care in hospitals should be agreed on, at European, national and local level.

Standards of practice for assessing and monitoring nutritional risk/status should be developed at a European level and the responsibility for each task clearly assigned. The hospital managers should initiate organisational research to optimise co-operation.

The patients and their relatives should be involved in the food and nutritional care – and be made aware of the importance of good nutritional status for successful treatment.

Research and development should be initiated regarding effective nutritional screening methods, benefits of ordinary food, effect of nutritional support pre- and post-hospitalisation, assessment of patient satisfaction and estimation of cost-benefit in relation to physical and mental functioning of the patients.

Last but not least, education should be improved at all levels – education, education, and education!!!!!

List of attendees

Speakers – Session Chairs

Dr Markku ÄÄRIMAA President of the Standing Committee of European Doctors Development of clinical nutrition in Hospitals, Finnish Medical Association PB 49 FIN - 00501 HELSINKI Tel : +358 400 645464 Fax : +358 939 30794 E-mail : markku.aarimaa@fimnet.fi	Prof Simon ALLISON Professor in Clinical Nutrition University of Nottingham Queens Medical Centre GB - NOTTINGHAM NG7 2UH Tel / Fax : +44 1159 194 427 E-mail : simon.allison@mail.gmcuh-tr.trent.nhs.uk
Prof Maria BARNA President, Hungarian Society of Nutrition Boraros-ter 2. II.12/a HU - 1093 BUDAPEST Tel / Fax : +36 1 217 63 77 E-mail : drbarnam@hotmail.com	Mme Gabriella BATTAINI-DRAGONI Director General – DG III – Social Cohesion Council of Europe Avenue de l'Europe F – 67000 STRASBOURG Tel : +33 3 88 41 21 78 Fax : +33 3 88 41 37 78 E-mail :gabriella.battaini@coe.int
Mr Paul CRYER General Manager – Better Hospital Food Programme, NHS Estates, Department of Health 1 Trevelyan Square Boar Lane GB - LEEDS LE2 6UA Tel : +44 113 254 7000 E-mail : paul.cryer@doh.gsi.gov.uk	Prof Sölve ELMSTÅHL Head of Department of Geriatric Medicine, Lund University Malmö University Hospital S - 205 02 MALMÖ Tel : +46 40 33 1973 Fax: +46 40 33 7319 E-mail : solve.elmstahl@smi.mas.lu.se
Prof Dr Peter FÜRST President, Universität Hohenheim Institut für Biologische Chemie und Ernährungswissenschaft 140 D - 70593 STUTTGART Tel : +49 711 459 2290 Fax: +49 711 459 2283 E-mail : b-c-nutr@uni-hehenheim.de	Dr Kaija HASUNEN Ministerial Adviser Ministry of Social Affairs and Health P.O. Box 33 FIN - 00023 GOVERNMENT Tel : + 358 9160 4035 Fax : + 358 9160 4492 E-mail : kaija.hasunen@stm.vn.fi

Dr Liz JONES Principal Clinical Adviser – NHS Estates Trevelyan Square Boar Lane, GB – LEEDS LSI 6AE	Prof Ulrich KELLER Head Physician Div. Endocrinology, Diabetology and Clinical Nutrition University Hospital CH - 4031 BASEL Tel : +41 61 265 5078 Fax : +41 61 265 5100

Dr Jens KONDRUP Senior Physician, Head of Nutrition Unit, Nutrition Unit 5601 Rigshospitalet, 9 Blegdamsvej DK - 2100 COPENHAGEN Tel : +45 354 52 559 / 51 034 Fax : +45 354 52 553 E-mail : kondrup@rh.dk	Prof Jörgen LARSSON Professor of Surgery, Dean of Higher Education Karolinska Institutet at Huddinge University Hospital, K53 S - 14186 STOCKHOLM Tel : +46 8 5858 2301 Fax : +46 8 5858 2340 E-mail : jorgen.larsson@gastro.hs.sll.se
Prof Jean-Claude MELCHIOR Professeur des Universités Médecin des Hôpitaux Hôpital Raymond Poincaré 104 Bd Raymond Poincaré F - 92380 GARCHES Tel : 01 47 10 77 58 E-mail : jean-claude.melchior@rpc.ap-hop-paris.fr	Ms Hanka MEUTGEERT Pottenbakkerstraat 17 NL - 8043 BM ZWOLLE Tel : +31 38 420 1764 Fax : +31 38 420 1447 E-mail : h.meutgeert@stofwisselingsziekten.nl
Dr. Bent Egberg MIKKELSEN Head of Catering Section - Division of Nutrition – Institute of Food Research and Nutrition – Danish Veterinary and Food Administration Morkhoj Bygade 19 DK - 2860 SØBORG	Dr Torsten MOSSBERG Director at the National Board of Health and Welfare Socialstyrelsen S - 10630 STOCKHOLM Tel : +46 8 5555 3033 Fax : +46 8 5555 3162 E-mail : torsten.mossberg@sos.se
Mrs Ulla NILSSON BALKNÄS Senior Lecturer in Clinical Nutrition Dept of Clinical Nutrition Sahlgrenska University Hospital Annedalsklinikerna S - 41345 GÖTEBORG	Mrs Henriette ØIEN National Council on Nutrition and Physical Activity P.O. Box 8139 Dep N - 0033 OSLO
Dr Lars OVESEN Danish Food Directorate 19 Morkjhoj Bygade DK - 2860 SØBORG Tel : +45 33 95 6000 Fax : +45 33 95 6001 E-mail : lov@fdir.dk	Mr Peter SCHAUDER Medizinische Universitätsklinik Göttingen Georg August Universitat Robert Kochstr. 40 D - 37075 GÖTTINGEN Tel : +49 551 39 6310

	Fax : +49 551 39 2026 E-mail : schauder@uni-goettingen.de
Dr Karl Olaf WATHNE Ulleval University Hospital N - 0407 OSLO Tel : +47 23 01 55 96 E-mail : wathne@zenith.no	Dr Orla ZINCK Head WHO Collaborating Center for Mass Catering Dansk Catering Center A/S Hoerkaer 2 DK - 2730 HERLEV E-mail : oz@dankost.dk

Attendees

Ms Marjo AHO
Free Lancer Nutritionist
Strandg. 8B3Y
FIN - 65100 VASA
Tel : +040 507 9935
Fax : +358 6 3173054

Dr ALIX
CH Le Mans
194, avenue Rubillard
F - 72000 LE MANS
Tel : 02 43 43 26 79
Fax : 02 43 43 24 97
E-mail : ealix@ch-lemans.fr

M. Christian ARDILLAC
Cuisinier
7, Am Gronn
L - 6917 ROODT-SYRE
Grand Duché Luxembourg
Tel : +352 770 183
E-mail : chris.ardillac@hotmail.com

Ms Mirjam BAERSEMA
Dietician
Medisch Centrum Haaglanden
Postbus 432
NL - 2501 CK DEN HAAG
Tel : +31 70 330 2646
Fax : +31 70 380 9459
E-mail :
m.baersama@mchaaglanden.nl

Mme Evelyne BARRY
Diététicienne CH
Centre hospitalier
BP 139
811 avenue Jean Goubert
F - 30103 ALES CEDEX
Tel : 04 66 78 33 33
Fax : 04 66 78 33 30

Dr Anne-Marie BECK
Research Nutritionist
Danish Veterinary and Food Administration
Mørkhoj Bygade 19
DK - 2860 SØBORG

M. Gérard BEDEX
Directeur d'hôpital
13, route de Krafft
F - 67150 ERSTEIN
Tel : 03 88 64 45 03
E-mail : g.bedex@ch-erstein.fr
Mme Isabelle BEDEX
Diététicienne
13, route de Krafft
F - 67150 ERSTEIN
Tel : 03 88 64 45 43
E-mail : i.bedex@ch-erstein.fr

Mrs Irena BELOHORSKÁ
Deputy

Pod zahradami 64A
SL - 841 01 BRATISLAVA

M. Jo BERWEILER
Responsable de la Restauration
Clinique Ste Thérèse Zithalklinik
36 rue Sainte Zithe
L - 2763 Luxembourg
Tel : +352 49776 4824
Fax : +352 49776 8530
E-mail : jo.berweiler@cst.lu

Mme Monique BICAÏS
Diététicienne
AP-HM NORD
Chemin des Bourelly
F - 13915 MARSEILLE CEDEX 20
Tel : 04 91 96 80 51
E-mail : mbicais@mail.ap-hm.fr

M. Thierry BLAIN
Responsable Secteur Restauration
Assistance Publique Hôpitaux de Marseille
Direction des Services Hôteliers
80, rue Brochier
F - 13354 MARSEILLE CEDEX 05
Tel : 04 91 38 17 04
Fax : 04 91 38 17 07
E-mail : tblain@ap-hm.fr

Mme Aline BOISSET
Business Development Manager
Nestle Clinical Nutrition (A3-550)
Avenue Nestlé, 55
CH -1800 VEVEY
Tel : + 41 21 924 3289
Fax : +41 21 924 4527
E-mail : aline.boisset@nestle.com

Mrs Veronika BRANDSTÄTTER
Landeskrankenhaus Klagenfurt
St. Veiterstrasse 47
A - 9020 KLAGENFURT
Tel : +43 463 538 22819
E-mail : Veronika.Brandstaetter@lkh-klu.at

Mle Véronique BROZAT
Diététicienne
58, rue du Chauffour
F - 88000 EPINAL
Tel : 03 29 34 15 62
E-mail : vbrozat@hotmail.com

Prof Maria Ermelinda CAMILO
Co-ordinator of Centre Nutrition and Metabolism University of Lisbon
Av. Prof. Ebas Moniz
P - 1649-0Z8 LISBOA

Prof Pilar CERVERA
Directrice Centre d'Ensenyament Superior Nutricio / I Dietètica (CESNID)
Av Prat de la Riba 171
08921 Santa Colomba de Gramenet
SP – BARCELONA
Tel : +34 934 680 721
Fax : +34 934 680 690

Mrs Flora CORREIA
Vice-President – Portuguese Society of Food and Nutrition Sciences
R. Dr Roberto Frias
P - 4200 PORTO
Tel : +351 22 507 4326
Fax : +351 22 507 4324
E-mail : floracorreia@fcna.up.pt

Prof Ivo DE LEEUW
President Flemish Society for Clinical Nutrition
and Metabolism
Dept. Diabetology – Clinical Nutrition
IUA
1 Universiteitsplein
B - 2610 ANTWERP
Tel : +32 3 820 2573

Fax : +32 3 820 2574
E-mail : ihleeuw@uia.ua.ac.be

Mme Odile DERENNE
8, rue Charles d'Ivry
F - 75014 PARIS
Tel /Fax : 01 45 40 99 89
E-mail : oderenne@noos.fr

Prof. John WT DICKERSON
Chairman, Scientific Committee 9th
WCCN / C/o Congress Secretariat
University of Westminster
9-18 Euston Centre, Room 409
GB - LONDON NW1 3ET
Tel : +44 (0)20 7911 5752
Fax : +44 (0)20 7911 5026
E-mail : shuklah@wmin.ac.uk

Mme DRILLET (représ. par Mme BARBIER)
Responsable Qualité Nutrition
42, rue de Bellevue
F - 92105 BOULOGNE-BILLANCOURT

Prof Marinos ELIA
Professor of Clinical Nutrition and Metabolism
Institute of Human Nutrition
Southampton General Hospital
Mailpoint 113 - Tremona Road
GB - SOUTHAMPTON SO16 6YD
Tel / Fax : +23 8079 4277
E-mail : elia@soton.uk

Mme Monique FANKHAUSER
Diététicienne / Chef et Coordinateur des Personnels Médico-techniques et de Rééducation
Hôpitaux Universitaires de Strasbourg
1, place de l'Hôpital
F - 67091 STRASBOURG CEDEX
Tel : 03 88 11 58 36
E-mail : monique.fankhauser@chru-strasbourg.fr

Mme Françoise FAYARD
Cadre diététicienne chargée Relations Clientèle
Hospices civils de Lyon
Direction de la Restauration
Direction des Affaires Economiques
45, rue Villon
F - 69008 LYON
Tel : 04 72 11 72 49
E-mail : francoise.fayard@chu-lyon.fr

Prof Miquel GASSULL
Head Department of Gastroenterology
Hospital Universitari Germans Trias I Pujor
Carretera del Canyet s/n 08916
SP - BARCELONA
Tel : +34 93 497 8951
Fax : +34 93 465 1385
E-mail : mgassull@ns.hugtip.scs.es

Prof Maria Gabriella GENTILE
Chief of Clinical Nutrition Dept of Niguarda Hospital
U.O. Dietetica e Nutrizione Clinica
Azienda Ospedaliera Ospedale Niguarda Ca'Granda
Piazza Ospedale Maggiore, 3
I - 20162 MILANO
Tel : +39 02 6444 2839
Fax : +39 02 6444 2593
E-mail : nutrizioneclinica@ospedale-niguarda.it

Mrs Vibeke GRAFF
National Board of Health
Amaliegade 13
P.O. Box 2020
DK - 1012 COPENHAGEN K
Tel : +45 33 48 7671
Fax : +45 33 48 7533
E-mail : vig@sst.dk

Mme Béatrice GUESNE

Cadre Supérieur Diététicienne
Centre Hospitalier
154, avenue Rubillard
F - 72037 LE MANS CEDEX 01
Tel : 02 43 43 26 01
Fax : 02 43 43 24 21
E-mail : bguesne@ch-lemans.fr

Mrs Pirjo HAKALA LAHTINEN
Food and Nutrition Service Director
Hospital District of Helsinki and Uusimaa
POB 100
FIN - 00029 HUS
Tel : +358 9 471 72101
Fax : +358 9 471 72100
E-mail : pirjo.hakala-lahtinen@hus.fi

M. Michel HASSELMANN
Professeur de Médecine
Réanimation Médicale – Hôpital Civil
F - 67091 STRASBOURG CEDEX
Tel : 03 88 11 50 41
Fax : 03 88 11 63 77
E-mail : michel.hasselmann@chru-strasbourg.fr

Ms Catherine HELD
Chief Dietitian
Ernaehrungsberaterung
University Hospital
CH - 4031 BASEL
Tel : +41 61 265 2535
Fax : +41 61 265 3982
E-mail : cheld@uhbs.ch

Dr Ulla HOELUND
National Board of Health
Amaliegade 13
POB 2020
DK - 1012 COPENHAGEN K
Tel : 45 33 48 76 84
Fax : 45 33 48 75 33
E-mail : uh@sst.dk

Mrs Andrea HOFBAUER
President, Austrian Association of Dietitians
Raaber Bahngasse 3/2/5
A - 1100 VIENNA
Tel : +43 664 1328 930
Fax : +43 1 600 3824
E-mail : dda-verband@cheese.at

Ms Mary Beth JACKSON
Dietetian – Product Manager Nutricia Norway
NUTRICIA NORWAY
PB 9310 GRØNLAND
N - 0135 OSLO
Tel : +47 23 00 2100
Fax : +47 23 00 2101
E-mail : mary.beth.jackson@nutricia.no

Mrs Cora JONKERS-SCHUITEMA
Dietitian nutrition team
Academic medical center (A2-450)
Meibergdreef 9
PO BOX 22700
NL - 1100 DE AMSTERDAM
Tel : +31 205 665 120
Fax : +31 205 664 440
E-mail : C.F.Jonkers@amc.uva.nl

Mme Renée-Paule LACOMERE
Service Diététique
Hôpital Saint-André
1, rue Jean Burguet
F - 33075 BORDEAUX CEDEX
Tel : 05 56 79 57 65
Fax : 05 56 79 58 91
E-mail : renee.lacomere@chu-bordeaux.fr

Mme Annick LAFFITTE
Responsable Secteur Diététique et Bibéronnerie
Groupe Hospitalier Necker-Enfants-Malades
149, Rue de Sèvres
F - 75015 PARIS
Tel : 01 44 38 16 47

Fax : 01 44 49 57 10
E-mail : annick.laffitte@nck.ap-hop-paris.fr

Ms Catherine LAMONT
Dietitian – Nutrition Subcommittee
Department of Dietetics
St Vincent's University Hospital, Elm Park
EI - DUBLIN 4
Tel : +353 1 209 4225
Fax : +353 1 269 6018
E-mail : c.lamont@st-vincent.ie

Mme Marine LEBRIS
Ingénieur Développement
DAVIGEL
BP 41
F - 76201 DIEPPE

Dr Jürg LÜTHY
Head of Nutrition Unit
Federal Office of Public Health
CH - 3003 BERNE
Tel : +31 322 9475
Fax : +31 322 9574
E-mail : juerg.luethy@baq.admin.ch

Mme Joëlle MASSON
Cadre Diététicienne
68, rue Etienne Gros
F- 69630 CHAPENOST
Tel : 04 78 86 11 11
E-mail : masson.joelle@chulyon.fr

Mrs Ann MICKLEWRIGHT
Dietetic & Nutrition Services Manager
Queen's Medical Centre
BAPEN & BDA
GB - NOTTINGHAM, NG7 2UH
Tel / Fax : +44 115 970 9109
E-mail : ann.mickelwright@mail.qmcuh-tr.trent.nhs.uk

Mme Danièle MISCHLICH
Chef du Bureau / Ministère de l'Emploi et de la Solidarité
Direction de l'hospitalisation et de l'organisation des soins
8, avenue de Ségur
F - 75007 PARIS
Tel : 01 40 56 41 26
Fax : 01 40 56 41 70
E-mail : daniele.mischlich@sante.gouv.fr

Ms Anne O'GRADY
Dept of Clinical Nutrition
St James Hospital
EI - DUBLIN 2
Tel : 01 453 7941 (bleep 440)
E-mail : clinicalnutrition@stjames.ie
Mrs Els OOSTERHEERT
Head of the Dietetic Department
AMC Meibergdreef
NL - 1105 AZ AMSTERDAM
Tel : 020 566 2843
Fax : 020 566 4440
E-mail : e.e.oosterheet@amc.uva.nl

Prof Laure PADRO
Adjointe Directrice Centre d'Ensenyament Superior Nutricio i Dietètica (CESNID)
Av. Prat de la Ribe 171
08921 Santa Coloma de Gramenet
SP - BARCELONA
Tel : +34 934 680 721
Fax : +34 934 680 690
E-mail : lpadro@cesnid.es

Mme Isabelle PARMENTIER
Responsable Pôle Restauration
Surveillante diététicienne
Direction des Prestations Hôtelières
Hôpital Jeanne de Flandre
CHRU DE LILLE
F - 59037 LILLE CEDEX
Tel : 03 20 44 44 04
E-mail : iparmentier@chru-lille.fr

Mrs Marusa PAVCIC
Head, Hospital Nutrition and Dietotherapy Services

University Medical Centre Ljubljana
Zaloska 7
SL - 1525 LJUBLJANA
Tel / Fax : +386 1 231 7170
E-mail : marusa.pavcic@kclj.sl

Mrs Terttu PELTOLA
Clinical Dietitian, M.Sc (Nutrition) /
Tampere University Hospital
P.O. Box 2000
FIN - 33521 TAMPERE
Tel : +358 3 247 7751
Fax : +358 3 247 4397
E-mail : terttu.peltola@tays.fi

Prof. Chris PENNINGTON
President of ESPEN
Department of Gastroenterology and
Clinical Nutrition
Ninewells Hospital
GB - DUNDEE
Tel : +44 1382 660111
Fax : +44 1382 425504
E-mail :
chris.r.pennington@tuht.scot.nhs.uk

Mle Céline PIRON
16, rue Henri Matisse
F - 21000 DIJON
E-mail : celine.pironas@free.fr

Ms Auli PÖLÖNEN
Helsinki University Central Hospital,
Department of Medicine
Kasarmikatu 11-13
POB 263
FIN - 00029 HUS
Tel : +358 9 471 88626
Fax : +358 9 471 88509
E-mail : auli.polonen@hus.fi

Mrs Monica RECHSTEINER
Leitende Ernährungsberaterin
Stadtspital Waid
Tièchestr. 99
CH - 8037 ZÜRICH
Tel : +41 01 366 22 11
E-mail :
monica.rechsteiner@waid.stzh.ch

Dr Wolfgang SCHINDLEGGER
Haus Der Geriatrie
LKH Kla
Genfurt
Krassniggstr. 2
A - 9020 KLAGENFURT

Ms Liesbeth SCHUYS
Facility Manager, Academic Medical
Centrum
Meibergdieel 9
NL - 1100 DD AMSTERDAM
Tel : 020 5666 999
Fax : 020 5666 888
E-mail : h.schuys@amc.uva.nl

Mrs Ulla SILJAMÄKI-OJANSUU
Chief Clinical Nutritionist, M.Sc.
(Nutrition)
Tampere University Hospital
P.O. Box 2000
FIN - 33521 TAMPERE
Tel : +358 3 247 7680
Fax : +358 3 247 5314
E-mail : ulla.siljamaki@tays.fi

Mme Mireille SIMON
Cadre Diététicien – Représentant de
l'ETAD auprès du Conseil de l'Europe
Centre Alexis Vautrin
Avenue de Bourgogne
F - 54511 VANDOEUVRE LES
NANCY
Tel : 03 83 59 83 02
Fax : 03 83 44 60 71
E-mail : m.simon@nancy.fnclcc.fr
Mrs Kirsten SKOVSBY
Consultant, Danish Dietetic
Association
Norre Voldgade 90
DK - 1358 KØBENHAVN K
Tel : +45 33 13 82 11
Fax : +45 33 13 82 40
E-mail : ks@oekonomaforeningen.dk

Dr Dorde STOJILKOVIĈ
Director
Federal Institute of Public Health
Federal Ministry of Health and Social
Policy
Omladinskih brigada 1
BELGRADE 11070
Federal Republic of Yugoslavia

Ms Merja SUOMINEN
Project planner / The Central Union
for the Welfare of the Aged
Malmin Kauppatie 26
FIN - 00700 HELSINKI
Tel : +358 9 3508 6013
Fax : +358 9 3508 6010
E-mail :
merja.suominen@vanhustyonkeskusliitto.
fi

Prof Bruno SZCZYGIEL
President of Polish Society of
Parenteral and Enteral Nutrition
Department of Gastroenterological
Surgery and Nutrition

Warsaw Medical University
Banacha Str 1A
PL - 02 097 WARSAW
Tel / Fax : +48 22 658 3647

Ms Acma TWIGT
Reinier de Graafgasthuis Dietist
Reinier de Graafweg 3-11
NL – 2625 AD DELFT
Tel : 015 260 4808
Fax : 015 260 4649
E-mail : twiqt@rddgg.nl

Dr Luzia VALENTINI
Scientific Information Center of the
Austrian Society Of Clinical Nutrition
Staudgasse 43/18
A - 1180 WIEN
Tel / Fax : +43 1 9690 487
E-mail : ake@chello.at

Mrs Andrea WILLEKE
Tumor Biology Centre
Breisacher Str. 117
D - 79106 FREIBURG
Tel : +49 761 206 2211
Fax : +49 761 206 1199
E-mail : wian0198@tumorbio.uni-freiburg.de

M. Michel VANBERGEN
Diététicien, Hôpital Erasme
Route de Lennik 808
B - 1070 BRUXELLES
Tel : +32 2 555 4260
Fax : +32 2 555 4562
E-mail : mvbergen@ulb.ac.be

Ms Helen VAN BILZEN
Dietist / Medisch Centrum
Haaglanden
Postbus 432
NL - 2501 CK DEN HAAG
Tel : +31 70 330 2646
Fax : +31 70 380 9459
E-mail : hel@freemail.nl

Secretariat

Council of Europe,
F – 67075 STRASBOURG CEDEX

Directorate General III – Social Cohesion

Mrs Gabriella BATTAINI-DRAGONI
Director General
Tel : +33 3 88 41 21 78
Fax : +33 3 88 41 37 78
E-mail : gabriella.battaini@coe.int

Directorate General III – Social Cohesion
Department of Health and of the Partial Agreement
in the Social and Public Health Field

Mrs Giulia PODESTÀ LE POITTEVIN
Head of Department
Tel : +33 3 88 41 26 10
E-mail : giulia.podestalepoittevin@coe.int

Partial Agreement Division in the Social and Public Health Field

Fax : +33 3 88 41 27 32

Dr Peter BAUM
Head of Division
Tel : +33 3 88 41 21 76
E-mail : peter.baum@coe.int

Mme Sheila BOULAJOUN
Principal Administrative
Assistant
Tel : +33 3 88 41 21 75
E-mail : sheila.boulajoun@coe.int

Mme Irène MALKI-BOTTE
Secretarial Assistant
Tel :+33 3 88 41 37 46
E-mail : irene.malki@coe.int

Directorate of Administration – Interpreters

Mrs Martine CARALY
Mrs Anne CHENAIS
Mrs Nadine KIEFFER

Mme Pauline REGNIER
Secretarial Assistant
Tel : +33 3 88 41 28 94
E-mail : pauline.regnier@coe.int

M. Angel RUIZ DE VALBUENA
Administrative Officer

Tel : +33 3 88 41 21 58
E-mail : angel.ruizdevalbuena@coe.int

M. Lauri SIVONEN
Administrative Officer
Secretary of the Committee of Experts on Nutrition, Food Safety and Consumer Health
Tel : +33 3 88 90 21 47 97
E-mail : lauri.sivonen@coe.int